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# hi-fi news

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& Record Review

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# MAX OR MINI?

## DALI KORE flagships & YG Acoustics Cairn

## VPI Avenger Direct

Belt-free vinyl spinner

## Jewel in the crown

Ortofon's MC Diamond is king of the grooves

## PS Audio M600

BHK's 'Signature' hybrid amplifier

## Vintage Review

Goodmans One Ten receiver from 1972

PLUS...

DS Audio DS-W3, Auralic Altair G1.1, AVM CS 8.3 Black & Atlas Arran cables

INVESTIGATION

## Live and kicking

Our pick of the 14 top on-stage albums

• **OPINION** 12 pages of letters and comment • **VINYL RELEASE** Pink Floyd's *Animals* 180g reissue
• **CLASSICAL COMPANION** Johann Strauss II *Die Fledermaus* • **STUDIO TOURS** Olympic, London
• **VINYL ICON** Hawkwind's *In Search Of Space* • **READERS' CLASSIFIEDS** More hi-fi bargains galore

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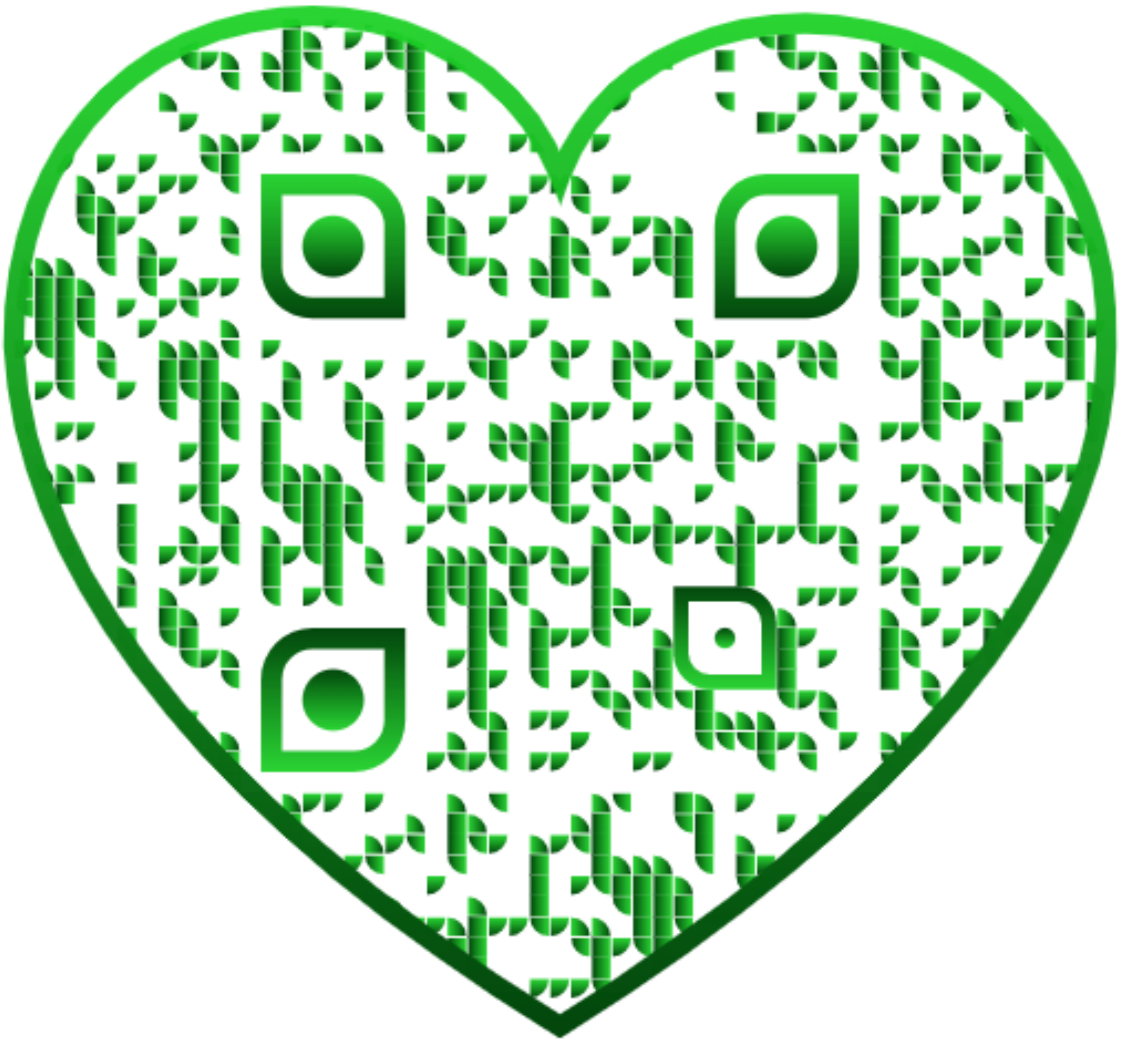

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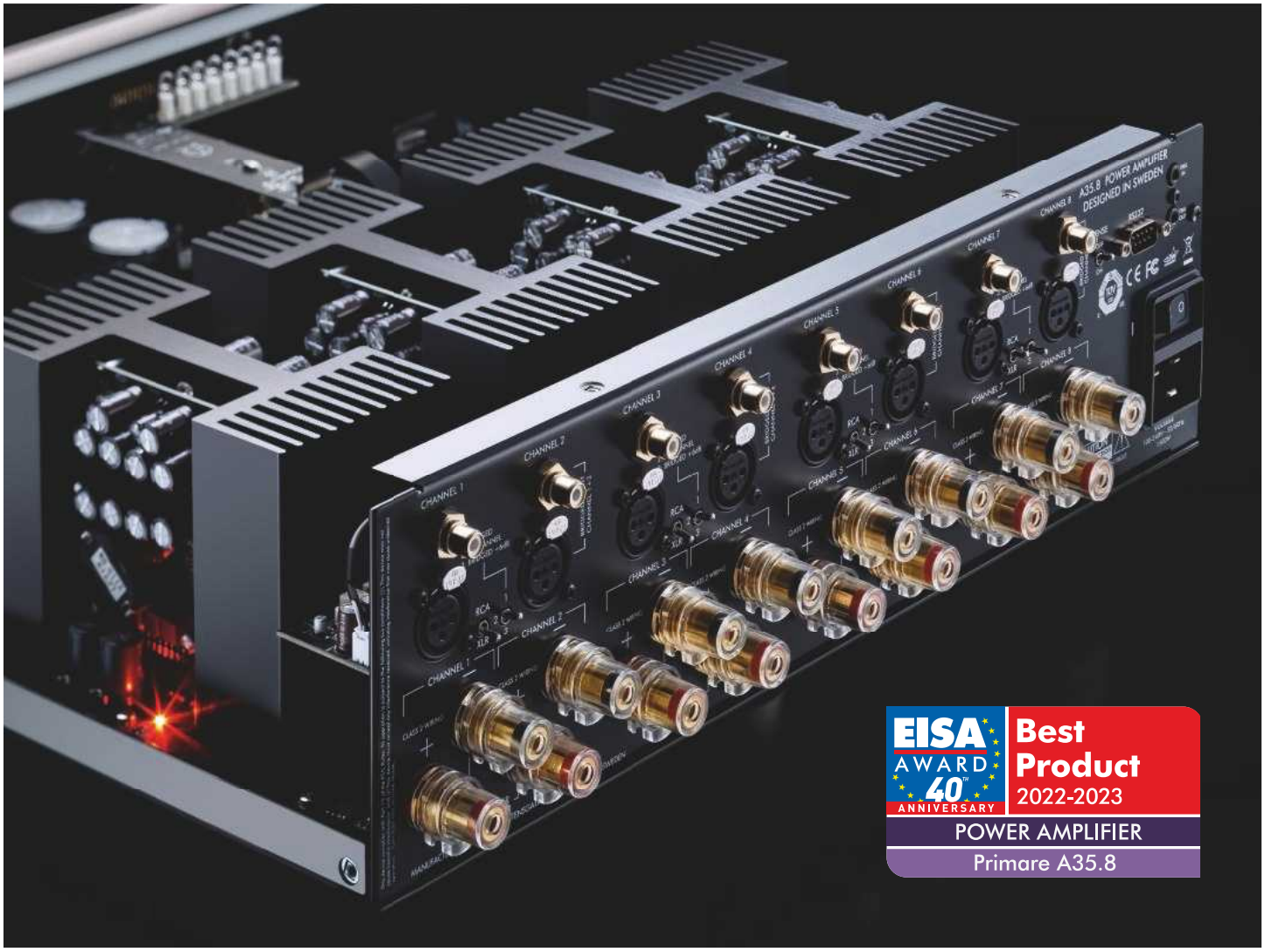


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▸ Turn the page to see layout diagrams that illustrate this system building versatility.

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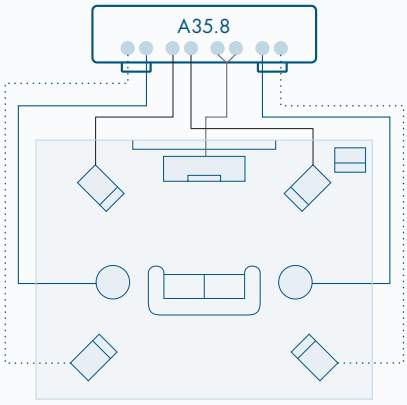


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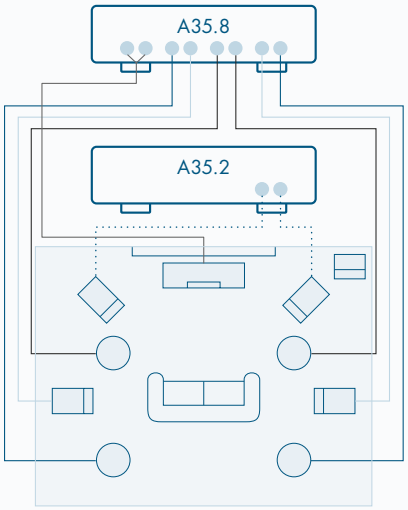


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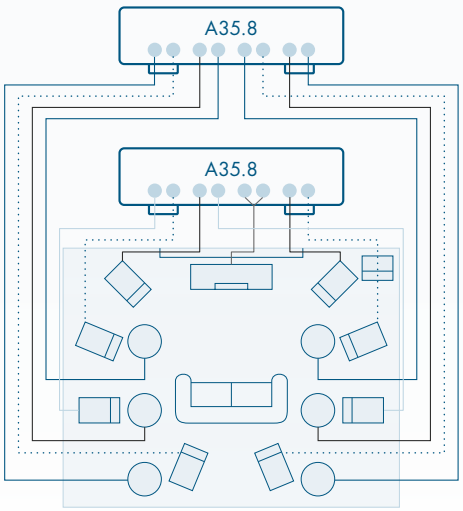


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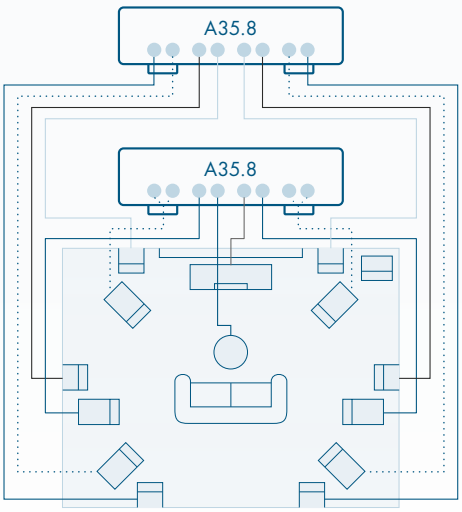

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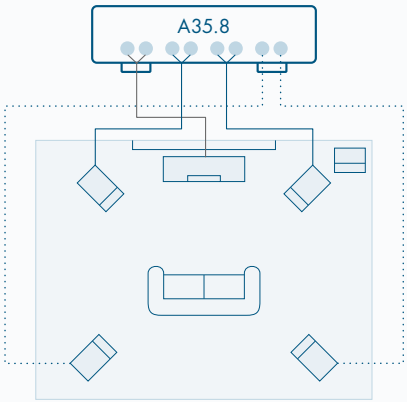


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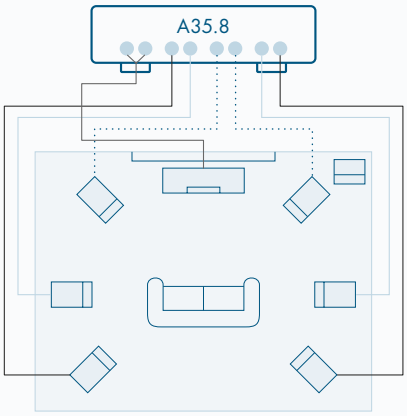


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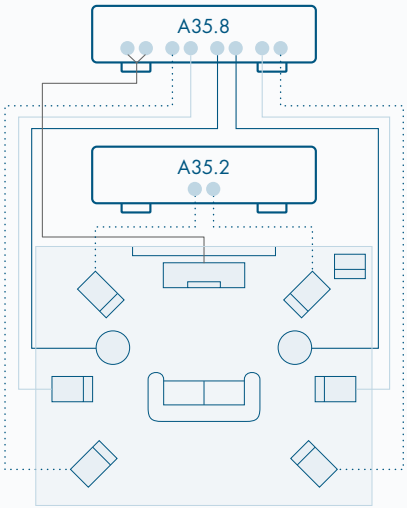


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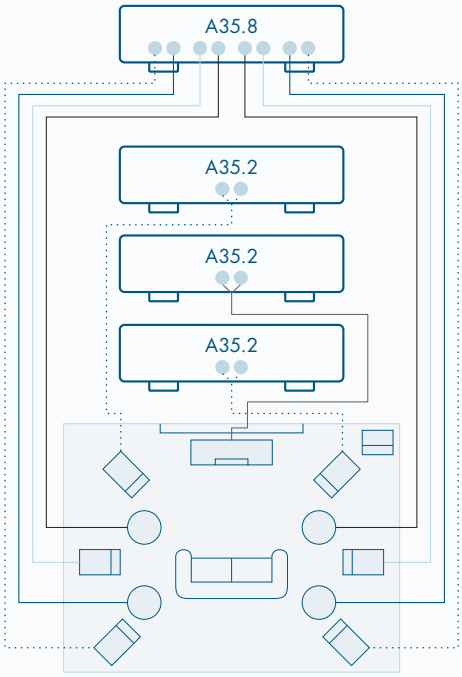
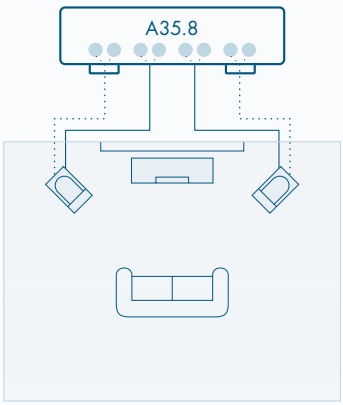



## 2.0 BI-AMPED STEREO SYSTEM

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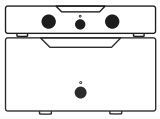

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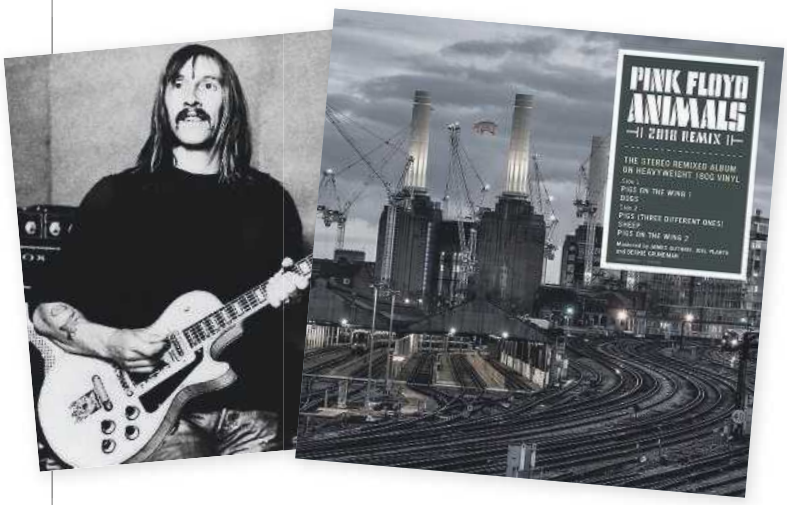
**RIGHT:** **Inspired by the Grand Master of 'optical' pick-ups, DS Audio's DS-W3 is its latest 'third gen' model. We trip the light fantastic on p68!**

**ABOVE:** **From Germany comes this triode tube/Class D hybrid all-in-one digital player/amplifier. The hub of your next system? See p60**




**MUSIC:** **Infused with early electronica, Hawkwind's *In Search Of Space* is our Vinyl Icon (p82) while Steve Sutherland charts the mix and remix of Pink Floyd's *Animals*, now on 180g vinyl (see p80)**

**RIGHT:** ***HFN* is the UK's representative of EISA's Hi-Fi Expert Group. Editor Paul Miller took over as EISA's President in June 2016 and was re-elected in 2021**

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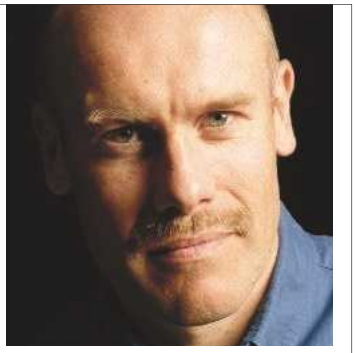


Having discounted headlines like 'Little 'n Large' or 'David and Goliath' by way of emphasising the exponential difference in scale between DALI's KORE and YG Acoustics' Cairn loudspeakers, we settled on 'Max' and 'Mini' for a simpler cover message this month! However, as two exemplars of the science and art of loudspeaker design, these new models have more in common than you might expect.

Both are priced at the upper end of their respective physical scales and while DALI's flagship is a huge, double-enclosure, dual-reflex floorstander offering the kind of sensitivity and bass extension you'd expect from a box of this stature, it shares with the Cairn a nimbleness and lightness of touch that's often lost to battleship models. That's because DALI's engineers were as keen for the KORE to sound appropriately 'small scale' with simple works as YG Acoustics' new Cambridge-based designers were to have their diminutive Cairn sound rather bigger than its boots.

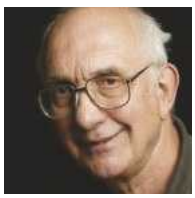
In practice both succeed... YG's extensive bass tuning (there's no by-the-book sealed box/second-order roll-off here) yields a very snappy rhythmic foundation while its low-colouration enclosure/driver design ensures the Cairn all but completely disappears as it fills any modestly-proportioned space with a disarmingly huge sound. Of course, when you need 'concert hall' impact then there's really no substitute for a man-sized loudspeaker, so room-dominating flagships like the KORE will always find their niche in the homes of the most well-heeled of audiophiles.

Should I have shouted 'spoiler alert'? Not really – our reviews on p40 and p64 have the inside story on both designs with our in-house lab testing by way of further insight, so dive in and relish the diversity of modern hi-fi design. What I will add, however, is that PS Audio's top-of-the-range monoblock amplifiers (and the last to have been penned by the late Bascom H King) make a fabulous partner for either loudspeaker. See p56 for more!

> 'Turn the page, dive in and relish the diversity of modern hi-fi design'

**PAUL MILLER** **GROUP EDITOR**

## HI-FI NEWS' EXPERT LINE UP: THE FINEST MINDS IN AUDIO JOURNALISM BRING THEIR EXPERIENCE TO BEAR ON ALL AREAS OF HI-FI & MUSIC



**BARRY FOX**
Investigative journalist supreme, Barry is the first with news of the latest developments in hi-fi and music technologies

**PETER QUANTRILL**
Peter Quantrill has been writing about music for magazines and record labels for 30 years. He is *HFN*'s master of the classics

**KEN KESSLER**
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**MARK CRAVEN**
Editor of our sister title *Home Cinema Choice*, Mark's passion for music extends from stereo to multichannel and Dolby Atmos

**TIM JARMAN**
Co-author of a major hardback on historic B&O equipment, Tim continues to research, repair and write about vintage hi-fi for *HFN*

**ANDREW EVERARD**
has reviewed hi-fi for over 30 years and is still effortlessly enthusiastic about new technology, kit and discovering new music

**STEVE SUTHERLAND**
worked on *Melody Maker* and then edited *NME* from 1992-2000, the Britpop years. Steve brings a unique slant to our Vinyl Release pages

# Coming up Roses

KOREAN COMPANY COMBINES 'CLASS AD' TECH WITH ROSE OS IN NEW STREAMING AMPLIFIER

HiFi Rose's new RS520 (£3399) might not feature the unusual 'steampunk' aesthetic of the manufacturer's RA180 [*HFN* Jul '22], but it utilises the same GaN (Gallium Nitride) transistor-based 'Class AD' amp technology, albeit here in traditional two-channel (250W/8ohm) guise. For this flagship 'just add speakers' model, this onboard power plant is partnered with an integrated Rose OS, the Android-based streaming platform previously seen on HiFi Rose's RS150 [*HFN* Jun '21]. It's accessed by a full-colour, capacitive touchscreen dominating the unit's front panel.

Wired connections include analogue line, optical, coaxial, USB-A, USB-B and HDMI eARC inputs (the latter supporting video playback either to the amp's display or a TV), plus Ethernet, Bluetooth and Wi-Fi (via a USB dongle). The RS520 is Roon Ready, MQA-compatible, and supports file playback from local storage and networked hardware.

An ES9038PRO DAC, 'Femto clock system' and proprietary op-amps reside in the unit's vented aluminium chassis, while the internal layout is performance-optimised with 'key functions split across separate boards'.

**Citech Co., Ltd, South Korea, 01235 511166; https://eng.hifirose.com**

# ELAC's top deck

MIRACORD RANGE GAINS NEW FLAGSHIP

Following an early preview at this year's High End Show in Munich, ELAC's new range-topping vinyl player, the Miracord 80, has now gone on sale. Priced £1999, the deck features a milled, solid wood plinth dressed with anodised aluminium panels, and a 10in carbon fibre tonearm that can be prefitted with an optional Clearaudio-designed moving-magnet cartridge (for a package price of £2199). Unusually, and to achieve a high 5.6kg mass, the belt-driven platter is fashioned from steel rather than aluminium, while the 33.3/45rpm speeds are governed by a PID servo-controlled DC motor with optical sensor. Finish options are gloss black or walnut veneer, while an optional dust cover can be added for £199.

**ELAC Electroacustic GmbH, Kiel, Germany, 01285 643088; www.elac.com**

# HI-FI NEWS' NUGGETS

## ELECTRO UPGRADE

UK electrostatic loudspeaker brand Mellow Acoustics has revisited its hybrid FrontRo model to deliver a new Pro iteration. Upgrades to the hand-assembled speaker include a larger (now 6.5in) dynamic woofer with new magnet design, plus a retooled crossover 'to give more electrostatic transparency in the midrange'. Finish options are light oak (£9500) or Californian walnut (£10,000). *www.frontro.co.uk*

## ENTRY IFI AUDIO DAC

Launched 'just in time for Christmas' with a stocking-friendly price of £79, iFi Audio's Uno is a palm-sized hub-powered USB-C DAC described as a 'first rung upgrade'. Its ES9219MQ/Q SoC (system on chip) supports 384kHz/32-bit PCM, DSD256 and MQA, with format and sample rate indicated by an LED ring behind the (analogue-based) volume control. Outputs are on a 3.5mm headphone socket (rated at 211mW/32ohm) and a pair of rear-panel RCAs. *www.ifi-audio.com*

# NAD goes retro

LIMITED EDITION '70S-INSPIRED INTEGRATED

As part of its 50th anniversary celebrations, NAD has announced a 'vintage-inspired' limited edition amplifier, the C 3050 LE. This 2x100W-rated integrated will sell in numbered units, from 1 to 1972, for £1750, and takes styling cues – including the original 'New Acoustic Dimension' logo and power meters – from the company's 1974-era 3030 model [*HFN* Dec '15]. The chassis is finished in a walnut veneer, but retro leanings only extend so far: the C 3050 LE sports two-way aptX HD Bluetooth, HDMI eARC and BluOS-delivered hi-res streaming connections, in addition to RCA line ins (including a phono stage) and headphone out. Amplification is via 'HybridDigital' UcD Class D modules, while a Texas Instruments DAC chip handles files up to 384kHz/32-bit. A non-limited version without BluOS module, the C 3050 (£1150), will follow in 2023.

**Lenbrook Inc, Ontario, Canada, 01732 459555; http://nadelectronics.com**

# Viking power

## GROUND-UP DESIGN FOR ELECTROCOMPANIET MONOBLOCK

The long-awaited successor to Electrocompaniet's AW 600 mono power amp (*aka* Nemo, which debuted in 1999), is the AW 800 M, which claims 800W/8ohm and is priced at £19,500. Showcasing a 'from the ground-up' design, it features a new output stage with 32 high-current bipolar transistors, and upgraded power supply with two shielded toroidal transformers and 0.21F of reservoir capacitance. This is a bridged amp, so will run in mono, stereo (2x300W/8ohm) or bi-amp modes, selectable via a rear panel switch above balanced XLR inputs and 4mm speaker binding posts. Supporting the 55kg, 490mm-deep chassis – with integral heatsinking – are a pair of alloy rods in the top-plate to improve overall stiffness. Other features include auto power down, trigger in/out ports, and illuminated 'feature lighting' (and new 3D logo) plus power button on the front fascia.

**EC Living AS, Tau, Norway, 01334 570 666; www.electrocompaniet.com**

# Headphone BOOM

## USB HUB-POWERED HEADPHONE AMP AND DSP

Sporting the styling one might expect from a company known for its software engineering, Apogee Electronics' BOOM (£329) is both a USB audio interface for music creators and a hub-powered desktop headphone amplifier. BOOM is bundled with Apogee Control 2 software for MacOS, iOS and Windows plus Ableton Live Lite DAW, and includes a 6.35mm 'instrument' input plus combination mic/line/jack socket. Apogee boasts its 6.35mm headphone output has a 'zero-ohm' source impedance while its onboard ADC and DAC hardware (no 'low-end codecs', says Apogee) operate up to 192kHz/24-bit.

Apogee also claims this is the first audio interface in its class to offer onboard DSP hardware, in this instance supporting the Symphony ECS Channel Strip – 'tuned' by famed audio engineer Bob Clearmountain – and including three-band equalisation, drive and compression tools.

**Apogee Elec. Corp., Santa Monica, US, 01462 480000; https://apogeedigital.com**

# Back to Nature

## FUNK FIRM LAUNCHES NEW FLAGSHIP TURNTABLE

New from East Sussex-based turntable/vinyl accessories specialist The Funk Firm is its 'From Nature' turntable, featuring a hand-crafted solid wood plinth with coloured 'river' inlay, which the company says can be customised to suit your listening room decor. Priced from £8383 the deck is prefitted with the brand's flagship 'Cross Beam' FX-3 tonearm, and supplied with its Houdini cartridge decoupler and 'low-noise' Achromat – two components that are also part of The Funk Firm's 'Bubble Isolation' kits available for third-party turntables. A further upgrade package is available that adds The Funk Firm's Akutrak moving-magnet phono preamp, and MM cartridge, for £10,383.

**The Funk Firm, Newhaven, UK, 07846 798367; https://thefunkfirm.co.uk**

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# Upcoming Events

## IMPORTANT DATES FOR YOUR HI-FI DIARY

| | |
|---|---|
| **05-08 JAN** | International CES 2020, Las Vegas, USA; *www.cesweb.org* |
| **24-26 FEB** | Bristol Hi-Fi Show, Marriott City Centre Hotel, Bristol; *www.bristolshow.co.uk* |
| **05 MAR** | Spring Audio Jumble 2023, The Angel Leisure Centre, Tonbridge, Kent; *www.audiojumble.co.uk* |
| **17-18 JUN** | North West Audio Show, Cranage Hall (De Vere Cranage Estate), Cheshire; *http://audioshow.co.uk* |
| **29-01 OCT** | The UK Hi-Fi Show *Live*, Ascot Racecourse Grandstand, *Ascot Berk*shire SL5 7JX; *www.hifishowlive.com* |

# Hi-Files Show '22, Belgrade

Words: **Milan Milošević** Pictures: **Ljubiša Miodragović**

The first weekend of October may have seen the residents of Belgrade rushing outside to enjoy the summer-like weather, but eager audiophiles had a different destination in mind – this year's Hi-Files Show, which took place at the city's Holiday Inn hotel. The 'long-time-no-see' atmosphere at the event, following its three-year long suspension due to the pandemic, reminded everyone that Zoom and multicasts are no substitute for hearing and seeing high-end audio components in the real world.

It was also heartening to see that the local scene has proved itself resilient to all kinds of global setbacks, with no names missing, while there were plenty of fresh products to enjoy, turning this year's event into one of the largest Hi-Files Shows ever held.

Auris Audio's first outing into the world of turntables and tonearms has resulted in some exquisite products. Pictured is the Bayadere 3, a belt-drive deck with a base that comprises a sandwich of aluminium and Kerrock. As for the platter bearing, this sits in a decoupled housing with a ceramic ball and Widia tile thrust pad. The arm is the company's W9 unipivot made of carbon fibre and aluminium. This features six precision ball bearings and an anti-skating system that hovers on two low-friction bearings. *www.aurisaudio.rs*

Acoustic Invader is a small Serbian manufacturer from Novi Sad with bold ideas. Its Lancer DAC [second shelf in rack] uses a Burr-Brown PCM1794 chip while featuring dual-mono Class A amplification based around J-FETs. Meanwhile, much of the same topology is used for its Fulcrum line preamplifier [third shelf in rack]. Together with the company's Class D mono amps, based around ICEpower 1200AS2 modules and rated at a full 620W/8ohm, the set-up powered a pair of Marten's two-way Oscar Trio loudspeakers with ease. *acousticinvader.com*

A subsidiary of Serbian brand Auris Audio, EarMen is all about headphones. Pictured here is its top-of-the range CH-Amp [*HFN* Oct '22] combination, which comprises a fully balanced pre/power amp (said to be good for up to 3.8W with low-impedance cans) and a dedicated power supply – the PSU-3. Also shown is the Staccato streamer. For listening, EarMen provided headphones from HiFiMan and Meze. *www.earmen.com*

To celebrate fifty years in the business, Canadian company PSB unveiled the Passif 50, a reworking of the Passif II, which it launched back in 1974. While the '70s aesthetics are retained, the speaker boasts updated technology, such as the use of titanium dome tweeters. The three-way design was driven by a NAD C 298 power amp [*HFN* Oct '21] paired with a NAD C 658 networked DAC/preamp. Meanwhile, the entire system was wired with cabling from AudioQuest in the form of Big Sur RCA interconnects and Rocket 44 for the speakers. *www.psbspeakers.com*

HiFi Station is a local manufacturer of stands for loudspeakers and headphones as well as component racks. It began as an OEM manufacturer for several local and regional brands, but quickly turned to the retail market with its high-quality supports and modular designs at various price levels. Custom designs, fillings and finishes are available on request.

Form combines with function in the YB MkII loudspeaker from Estelon [foreground], which combines SEAS and Scan-Speak drivers in an asymmetrical cabinet made from powdered marble. Behind it stands the Elipson Legacy 3230 – a massive, 1340mm-tall three-way floorstander boasting an ATM ribbon tweeter allied to twin 8in woofers. *www.estelon.com*; *https://en.elipson.com*

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**S7t, Hi Fi News, April 2022**

"Like its S7t sibling, it excels when it comes to mid and high details, resolving the most subtle of musical moments and nailing the feel and tone of instruments...It all sounded wonderfully three-dimensional."
**S4b, Hi Fi News, June 2022**

"For those who like to close their eyes during listening, the R7ts are heaven sent. Put another way: as Knopfler's Schecter Strat gave way to the piano toward the track's end, I started to well up. It really was that good."
**R7t, Hi Fi News August 2022**

"Perlisten brings exceptional levels of detail and nuance to movies and music, underpinned by rock-solid lows. Lush looks and outstanding build quality make this series even more of a winner."
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LOUDSPEAKER SERIES
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The Legendary is part of Teoharov Audio's Legendary series, created in collaboration with renowned guitarist Vlatko Stefanovski. A limited edition of just 15 pairs, the speaker is a two-part system comprising Class D amps – one said to deliver 180W, the other 70W – with ICEpower modules at their heart. These connect via custom XLR cables to Scan-Speak Illuminator drivers which are in turn housed in a rigid, asymmetrical cabinet made of ornalide and HDF with a baffle of aluminium. The guitar neck stand features stepped layers of damping material. *www.teoharov.mk*

Serbian company Soulines presented its Kubrick DCX turntable [*HFN* Jul '18] with a new tonearm manufactured in-house. Called the KiVi, this 9in unipivot design was equipped with a Benz Micro Zebra cartridge, the deck hooked up to Soulines' The Loop MM/MC tube preamp via Harmonic Link III interconnects from Harmonic Technology. *www.soulines.com*

Known for its disc and LP demagnetisers, Velikinac Audio Lab from Serbia has stepped into the world of high-end speakers in grand style with the Fakir One [right]. While details about the new design were scant, the speaker reminds us of the B&W 801, with midrange and tweeter in a separate, semi-horn enclosure, decoupled from the bass cabinet. *velikinacaudiolab.com*

Brutalism meets beautiful sound in the ONE.618 omnidirectional speaker from Croatian company Synthesis. A single block of cast concrete, available in various finishes, hosts a full-range driver allied to a Class D amplifier plus Wi-Fi and Bluetooth receivers, wired digital inputs and DSP. The ONE.618 can be configured in mono, stereo or for multiroom set-ups. It has touch-sensitive user controls and even a wireless phone charger. *www.one618.eu*

# inakustik

## PHYSICS NOT VOODOO

hi-finews EDITOR'S CHOICE

**"...if you're thinking of blowing the cobwebs from your set-up, In-akustik has the air!"**

*NF-204 Micro Air, Editor's Choice, Hi Fi News, April 2022*

**"There's a lot of hand-made cable here for the money, making it a reliable bet for that first 'big upgrade'."**

*LS-204 XL Micro Air, Editor's Choice, Hi Fi News, February 2021*

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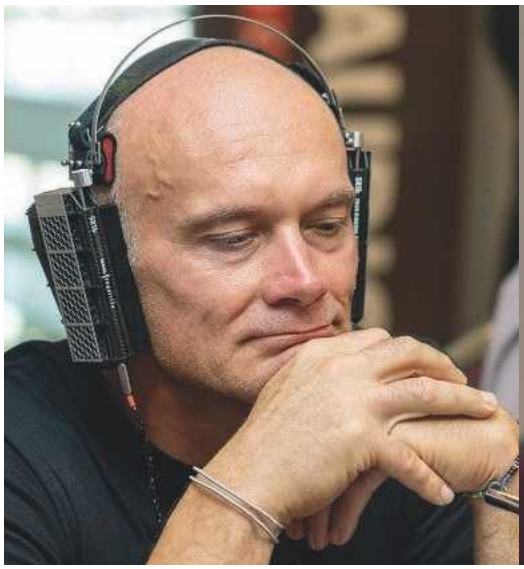

Visitors to the event could try RAAL-requisite's SR-1b [left] and CA-1a [right] headphones, both featuring ribbon drivers, the latter coming with the company's TI-1b transformer interface, which can be hooked up to a conventional amp. The HSA-1b 'switch drive' headphone amp was also showcased, which sports loudspeaker terminals for the connection of ribbon headphones. Also on demo was the *germanium* transistor Hyperius head amp. Completing the high-end can bonanza was Solaja Audio with its Tandem SE tube amplifier. *www.raalribbon.com*

Lovers of classic hi-fi were captivated by these exquisite Harbeth HL-Compact 7-ES3 XD loudspeakers fed by a no less classic, but refreshing-sounding, Linn LP12 Majik turntable [*HFN* Aug '21] with Adikt MM cartridge. The rest of the set-up included Linn's Selekt DSM network player/preamp with a Katalyst DAC and Akurate 2200 power amp. The system was wired with Linn Silver interconnects, AudioQuest Rocket 88 bi-wire speaker cable and Yukon mains cables. *www.harbeth.co.uk*

This pure Audio Note system saw a TT Two Deluxe turntable and M2 Phono preamp take it in turns with the company's CD-T3 transport and DAC 3.1x. Power amp was the P2 SE Signature and speakers the AN-E. As for cabling, this was also Audio Note all the way with LX interconnects, SP-E loudspeaker cables and Lexus 50 digital cable. *www.audionote.co.uk*

Surely few statement systems are as impressive as this rig from Nagra. On the middle shelf of the Finite Elemente rack sits the Classic Phono [*HFN* Aug '22], while topping the stack is the HD PREAMP [*HFN* Nov '18] perched above an HD DAC X. Three PSUs occupy the bottom shelf. Power amps were, naturally, the mighty HD Amp monoblocks [*HFN* Jul '18]. *www.nagraaudio.com*

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Dynaudio showcased its Heritage Special standmount speaker, limited to 2500 pairs. Beautifully crafted and finished in sustainable American Walnut veneer, each enclosure measures 385x208x337mm (hwd) and houses an 18cm woofer below a 28cm Esotar 3 tweeter. The speakers played beautifully paired with Electrocompaniet AW 180 monoblocks and a MOON P-8 used solely as a preamp. Digital sources consisted of a Métronome Le Player 3 and MOON 780 DAC. Transparent Audio's Ultra series cables completed the system.
*www.dynaudio.com*

This striking-looking speaker hails from Italy. Made by VREL Electroacoustic, the two-way, three-driver Bequadro 3 is an open-baffle design laying claim to an extraordinary 97dB sensitivity. Despite the challenges of positioning a speaker of this type in order to achieve the best sound quality, it delivered a fine midrange performance with real immediacy. The amplifier used was the recently launched Audio Research I/50 [*HFN* Oct '22], rated at 2x50W/8ohm via pairs of 6550WE tubes. The partnering source was an Audio Research DAC9 [*HFN* Sep '17] while the cabling loom was from Siltech's 35 Anniversary Series.
*www.vrel.eu*

The Voce Grande is a two-way, transmission-line loudspeaker from the pen of French designer Jean-Marie Reynaud. Its crossover is housed in the integrated stand in order to isolate it from internal vibrations. The ATM tweeter and 6.5in woofer are trickled down from the company's Abscisse and Orfeo models.
*www.jm-reynaud.com*

## Next month

*HFN* reports from Warsaw's 2022 Audio Video Show

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hi-fi news OUTSTANDING PRODUCT

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Ken Kessler - hi-fi news

This provides powerful torque, allows precise speed control, and keeps unwanted vibrations from the drive away from the platter. A brand new tonearm, the TP 124 can be precisely adjusted in all parameters to the cartridge of choice and features an innovative anti-skating solution with a ruby bearing and a patented electric tonearm lift to facilitate gentle placement and removal of the stylus. Thorens has payed attention to every detail when developing the new TD 124 DD to ensure that it meets your highest aspirations in sound performance.

## TD124/SPU 124 £8000/£2000

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hi-fi news OUTSTANDING PRODUCT

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Special features include:

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**TD201** £550

**TD101A** £575

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**TD102A** £765

**TD402DD** £925

**TD403DD** £1,450

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- Stable and super silent direct drive
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Ken Kessler - hi-finews

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# Live and kicking

From watershed musical moments to career-defining concerts, capturing the thrill of a live performance on tape can be tricky. **Johnny Sharp** chooses the live albums that cut it

They are never a substitute for being there, but live albums have served a far more important role in the history of popular music than mere adverts for artists' stage shows. Many of the best have cemented great performers' reputations while also being greatest hits sets, offering an important point of difference from studio equivalents.

Some have been the albums that launched careers – Peter Frampton is a prominent example here. Others we've chosen in this selection are notable for the wild scenes captured – oh to have been a fly on the wall of that insane Stooges show in Detroit, captured on *Metallic 'KO*.

## STAGE NAMES

Many of these live albums didn't benefit from the recording technology that is at the disposal of modern-day acts (and yes, overdubbing and studio trickery was doubtless used to tidy up the sound in some cases). But it rarely matters when performances cut through powerfully.

Some artists never make a single defining studio album to rival a great live LP – James Brown, for instance – and the opportunity a live recording offers to reflect the charismatic personality and on-stage X-factor of an artist, not to mention the rapport they have with their audiences, can make for a unique listening experience.

Is it coincidence that while live music has never been bigger or more lucrative, interest in the live album appears to have waned? Perhaps because it's now possible to witness a stage show with a quick Google search, it means live recordings on LP don't seem so special. These examples make for a fine showcase of what the YouTube generation is missing...

## TALKING HEADS

### Stop Making Sense

*(EMI TAH 1, 1984)*

'I got a tape I wanna play'. So begins David Byrne's acoustic introduction to 'Psycho Killer' that kicks off this brilliant live set from a singular post-punk force. And although it is one live album outstripped by the extraordinary film version of the same concert, in its own right it remains an outstanding audio document of this band at the height of their powers. The core quartet are accompanied by an irresistibly funky expanded backing band and some magnificently polyrhythmic arrangements. You won't see the frontman's big suit when listening on disc, but the sizeable sound the band make is stunning enough.

## IGGY & THE STOOGES

### Metallic 'KO

*(Skydog SGIS 008, 1976)*

If you really need proof that high-fidelity sound and a seamlessly professional performance isn't necessary to make a classic live recording, then this is it. The Stooges' last stand (before their latter day reformations) was a show at Detroit's Michigan Palace, before which 'the Ig' had challenged local biker gangs to come down and do their worst. The resulting show (which made up the latter half of the original release before being later reissued in full) crackles with chaotic tension and blazing aggression as missiles shower the stage and the main man is lewd, crude and riveting company.

## JOHNNY CASH

### At Folsom Prison

*(CBS 63308, 1968)*

If ever a live album made all sorts of sense, it was this one. The Man In Black had referenced the titular maximum-security facility outside Sacramento in his 1955 hit 'Folsom Prison Blues', and had been playing shows in jails since the late 1950s. His chosen role as the man speaking up for society's forgotten was set in stone here as he delivered a riveting collection of songs with themes of murder, regret, incarceration and defiance. No, he never spent more than a night in the cells himself, and he didn't really shoot a man in Reno 'just to watch him die', but for a moment or two, you might just believe that he knew what it felt like.

## AC/DC

### If You Want Blood (You've Got It)

*(Atlantic K 50532, 1978)*

At the time of this album's release, other bands might have been sharpening up in the face of punk or branching out into disco, but AC/DC were only ever going to be about riffs, rasp and hard, bluesy rock. This set was recorded in Glasgow and the famously rowdy Caledonian crowds play their part in a vintage performance. As a result, to this day, audiences punctuate the deathless riff to 'Whole Lotta Rosie' with 'Angus!'.

## BRUCE SPRINGSTEEN AND THE E STREET BAND

### Live 1975-85

*(CBS 450 227 1, 1986)*

This 40-track retrospective of The Boss and his boys' last decade on stage was released to capitalise on the global superstardom he achieved with 1984's *Born In The USA*. And like the man's shows, it doesn't just fob you off with 45 minutes of material. Rather, it's a 5LP box set that lasts roughly as long as his average set, and takes in everything from the 'Thunder Road' era to *Nebraska*'s bleak acoustica and his globe-conquering '80s hits.

## ARETHA FRANKLIN

### Aretha Live At Fillmore West

*(Atlantic 2400 136, 1971)*

The Queen of Soul's four-night stand in Los Angeles was captured on one of the first great stage recordings of the 1970s and one of soul music's finest historical documents. She devotes much of the record to renditions of contemporary classics such as 'Bridge Over Troubled Water', but with her Fender Rhodes piano lacing The Kingpins' peerless backing, it lends credence to the notion that she could sing the *Yellow Pages* and it would be a religious experience.

## NIRVANA

### MTV Unplugged In New York

*(Geffen GEF 24727, 1994)*

Few of the live recordings that resulted from MTV's series of acoustic shows can hold a lighter aloft to this 1993 set from grunge's era-defining trio. If they first made their name with splenetically powerful rock shows, this reveals it was the emotional resonance of Cobain's voice and his band's songs that could cut through regardless of accompaniment. And the cover songs stand out as much as the originals, including a red-raw reading of Leadbelly's 'In The Pines'.

## JAMES BROWN

### Live At The Apollo

(King KS 826, 1963)

Recorded at the future Godfather of Soul's own expense, this recording of his performance in Harlem, New York from 1962 laid down a blueprint for all rock stage recordings to come. It may only clock in at just over half an hour, consisting largely of song medleys, but the steaming energy and stomping soul power Mr Brown and his band The Famous Flames generate proved more than enough to boost his reputation throughout the pop firmament.

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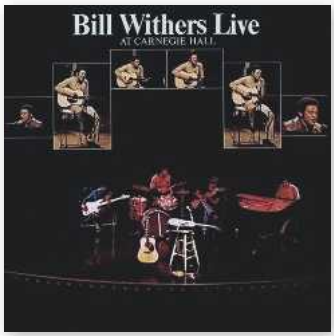



## BILL WITHERS
### Live At Carnegie Hall

*(Sussex AMLD 3001, 1973)*

This show in New York captured the essence of a soul singer-songwriter in the wake of his first two breakthrough albums. The songs had sometimes verged on MOR but performed live with a sublimely loose, funky band they are allowed to freewheel, while the main man is at ease telling stories and giving the songs rich context. Withers even manages to include a classic that was never laid down in the studio, the anti-Vietnam vignette 'I Can't Write Left-Handed'.

## MC5
### Kick Out The Jams

*(Elektra EKL 4042, 1969)*

Inspired by the aforementioned James Brown's *Live At The Apollo*, these proto-punk trailblazers made their debut album a live one, aiming to harness stage shows in which they demanded nothing short of signing up for the revolution from their awestruck public. They didn't mince their words, either, with the introduction to the title track 'Kick out the jams mother****ers!' censored on some versions of the LP. 'Are you ready to testify?' hollers Fred Tyner. You better be.

## B.B. KING
### Live At The Regal

*(His Master's Voice, CLP 1870, 1965)*

While white beat groups were bending the blues to their will, there was nothing like hearing the real deal in action. King's weeping, moaning guitar is the platform for this performance as ever, but he also reveals himself to be a magnificent showman, whipping up the Chicago audience while a muscular backing band beef up every last lick in some style. He's introduced as 'the world's greatest blues singer', and despite the stiff competition, on this evidence it's a fair claim.

## THE WHO
### Live At Leeds

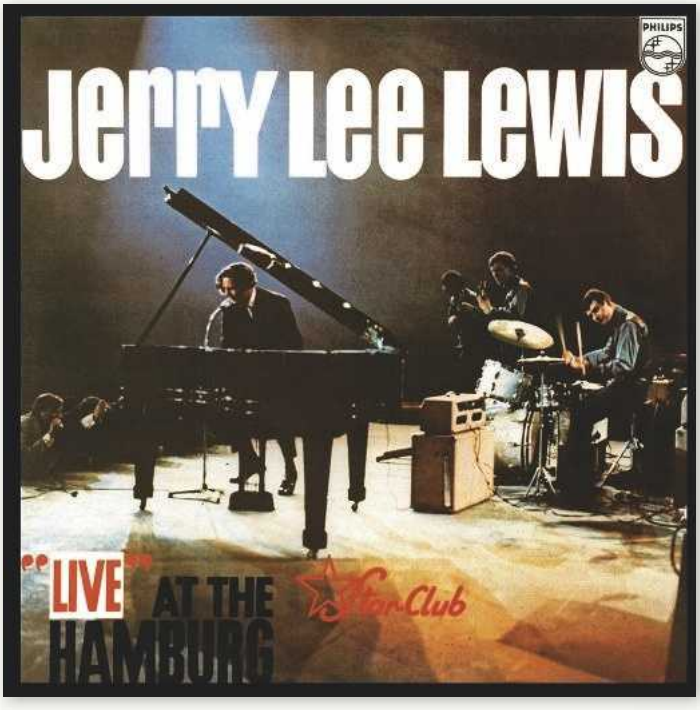
*(Track Records 2406 001, 1970)*

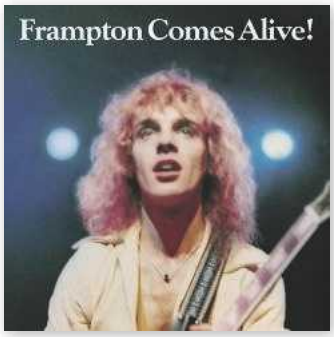
At the start of the 1970s, The Who were widely regarded as one of the world's greatest live acts, due in no small part to their being focused on serving up rock with visceral attack rather than the more subtle, rock opera side of their character. This show, recorded at the University of Leeds Refectory on Valentine's Day in 1970, captures them in majestically gutsy form, with Keith Moon's scattergun fills and Townshend's snarling riffs positively turbo-charged.

## JERRY LEE LEWIS
### Live At The Star-Club, Hamburg

*(Philips BL 7646, 1964)*

After The Beatles and those who followed in their slipstream had taken the sound of the original rock 'n' rollers and run with it, the self-styled 'Killer' was invited to record a live set at the very same club the Fabs learned the ropes. By this time Jerry Lee Lewis was apparently in the showbiz wilderness after being chased out of the UK with his under-age bride, but his stage show still sounds gloriously exhilarating. While on the technical front his performance is hardly flawless, it fizzes with revitalised outlaw energy, while his young backing band, The Nashville Teens, skilfully manage to keep the show on the rails.




## PETER FRAMPTON
### Frampton Comes Alive!

*(A&M AMLM 63703, 1976)*

One of the defining LPs of the golden age of the live album, this was one of those that proved you could launch an artist to transatlantic stardom simply by recording the pick of his material on stage and sticking it out there. Defining cuts are, of course, the TalkBox-enhanced 'Show Me The Way' – the album's lead single whose chart success paved the way for 11 million albums sales to date – and the eternally smooch-worthy 'Baby I Love Your Way'.

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You hold in your hands the world's oldest and most respected hi-fi magazine – *Hi-Fi News* – where heavyweight audio engineering is our stock in trade. All our review products are typically subject to a one-month test process from shipping, unpacking, installation, photography, lab work, extended listening, disassembly/packing and collection. This practice was maintained right through the pandemic period, with full Covid biosecurity adding to the logistical complexity of our four-week issue schedule. But we did it... never missing one issue of the magazine or compromising the '*Hi-Fi News* Pledge':

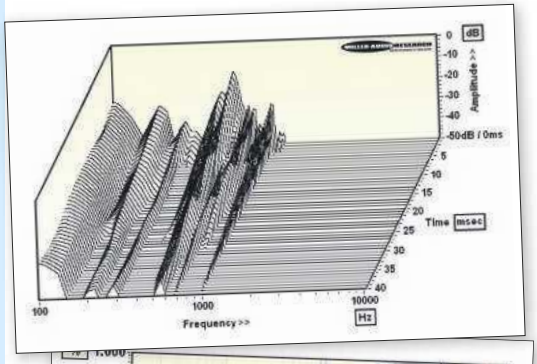
**1.** Our hardware reviews are never brief 'hands on' experiences of a product from a press conference, brand-led demo or distributor's back room spun up into a four or five page article.

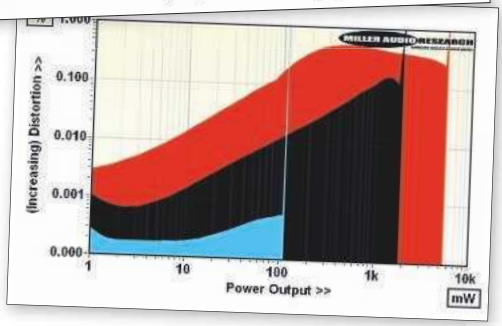
**2.** Products reviewed in *Hi-Fi News* already have secure distribution and retail channels in the UK. So readers *should* be able to arrange their own auditions if suitably inspired!

**3.** All review samples are shipped to and installed at our main facility. They are photographed by us (unless stock shots conform precisely to our template) and lab tested to a uniquely world-class standard before listening begins...

**4.** We believe in high quality investigative journalism by experienced writers and editors – we ask questions, we do our research and we make truly independent evaluations. We do not release reviews to brands for 'fact checking' or other modification prior to publication. They read it when you read it.

**5.** Above all we respect our readers. You demand the best reviews informed by decades of experience, product knowledge and technical expertise. We endeavour to live up to that expectation.




**LEFT: Innovative, research-based test & measurement – with exclusive colour 'data visualisation' – underpins every review in *Hi-Fi News*. In each issue you will discover performance-determining facts that are unique to our reporting**

**ABOVE: Matt Miller [right] and Alex from DALI UK during the long haul of installing the flagship KOREs in our listening room. See p40 for our in-depth review, interview and lab report**

## IN THIS ISSUE...

**LEFT: Only *Hi-Fi News* provides in-depth reviews of pristine vintage audio hardware, pictured and tested inside and out. Here's a close-up of the AM aerial and oscillator tuner for the Goodmans One Ten receiver [see p120].**

**RIGHT: Not only are our reviews the most comprehensive available, but we also commit to our own photography. Here's the direct-drive version of VPI's Avenger turntable [see p46] waiting for lighting on our shooting deck.**

Floorstanding four-way reflex-loaded loudspeaker
Made by: DALI AS, Nørager, Denmark
Supplied by: DALI Audio UK Ltd, Herts, UK
Telephone: 01462 337320
Web: www.dali-speakers.com
Price: £70,000



# DALI KORE

Years in the making, DALI's KORE flagship breaks cover and it's a triumph of engineering, style and superlative sound
Review: **Andrew Everard** & **Paul Miller** Lab: **Paul Miller**

There are many ways to express that emotion of delighted surprise when encountering something unexpected: everything from the archaic 'Gosh' or 'Goodness', through the more contemporary low whistle or 'Wow', or even the kind of expletive never found in these pages. Meanwhile, the Blessed Google suggests that the Danes might say 'hold da helt ferie', literally 'take a whole vacation', which I guess is somewhere close to the American 'get outta here'. But for those of us brought up on British films of the latter part of last century, perhaps the best reaction to these new DALI flagship speakers is just to mention their name, perhaps followed by 'blimey' for the full effect.

You see, the DALI KORE speakers, yours for a cool £70,000 a pair in their combination of Ebony Amarra wood veneer with gold accents, are impressive on just about every level. Even if they're not the very tallest floorstander we've reviewed over the years, at 1.675m the KORE remains an imposing presence in any room thanks as much to its sheer bulk and solidity.

> 'The cabinet... "hold the drivers, be airtight, and shut up"'

## ON A ROLL

At 148kg per speaker (248kg per crate) the KORE's unpacking and installation is eased by a 'castors and ramp' approach first championed by B&W, allowing these huge cabinets to be rolled out of their crates and into place [see p39]. Then it's a matter of winding down the spikes to support the speakers, before finally unbolting the castors and putting them away somewhere safe in case you ever feel brave enough to move the cabinets again.

All the mass of this speaker helps define its performance rather than contributing to aesthetic effect, although there's no disputing the visual impact of the KORE's stunning industrial design. With one of its hefty 290mm bass drivers mounted high up in the cabinet, stability was a concern – hence the outrigger feet and 32kg plinth made from concrete and resin, the latter 'grounding' the speakers while also allowing for some adjustment of tilt towards the listener. The position of the two bass units on the baffle, and their slight angle, also forms part of the overall time-alignment of the KORE's output for a notional 3m listening distance.

## STUFF OF LEGEND

Everything about the KOREs seems built on a Herculean scale, not least those 'nearly 12in' woofers with their twin voice-coil balanced drive and second generation of DALI's Soft Magnetic Compound (SMC) technology. The idea of using twin voice coils is to extend the linear performance of the motor, for as one coil is leaving the surrounding magnetic field the other is entering. Directional non-linearities are cancelled, distortion is reduced and maximum output improved [see PM's Lab Report, p45]. Shorting rings are also used to linearise voice-coil inductance and reduce distortion still further. In practice, and despite the much-reduced excursion of the partnering 178mm midrange unit, all three of these moving-coil drivers employ the same 'Balanced Drive' concept.

They also feature similar sandwich cones made from paper pulp reinforced with wood fibre, the rich colour and 'natural' texturing of the cones being very familiar to DALI-watchers over the years. Those bass drivers are mounted into separate ~72 litre reflex enclosures and tuned to a claimed 22Hz via angled ports that exit at the rear via a pair of slatted exhausts. The midrange unit, by contrast, is loaded into an attenuated open back housing. These drivers are combined with a 35mm soft textile dome tweeter and a 10x55mm ultra-high frequency

**RIGHT: Supported on a cement/polymer base with outriggers, the KORE's massive cabinet is fashioned from a 28mm birch laminate with resin polymer and alloy structural elements hosting the drivers**

## ORIGIN STORY

**The inspiration for the KORE was an abandoned project from a decade ago, the ME9 [pictured], which was shown as a concept design at various events. With a lofty cabinet having an hourglass shape, the side panels curved inwards, it used bass drivers mounted at the top and bottom of the baffle, flanking a pair of midrange units which, in turn, straddled a central tweeter. It was built as a cost-no-object statement reflecting what the company could achieve at the time, and DALI hinted at an official launch within a year under the Eminent name. However, events overtook the ME9, and despite the obvious effort put into both designing and building the speaker, a downturn in the world economic situation led to it being shelved before it could come to market. But elements of the design survived, and are now incorporated into the KORE, which is said to bring together all the company has learned in the past 40 years. Understandably, the KORE will be built to order.**

**LEFT: The KORE comprises two 290mm 'Balanced Drive' reflex-loaded woofers working into separate 72 litre spaces, a matching 178mm mid unit and a 32mm dome/10x55mm 'ribbon' EVO-K hybrid tweeter**

planar/ribbon unit, this forming what DALI calls its EVO-K driver: the version here a development of that found in the company's Epicon loudspeakers. The crossover, operating at 390Hz, 2.1kHz and 12kHz, is a split design with the bass section mounted in that hefty composite plinth, and the midband-to-treble handled by a second board, located close to those drivers.

### DIVIDE AND CONQUER

The enclosure, meanwhile, is built by a Danish furniture manufacturer that specialises in 'curved shapes', using a 28mm-thick birch laminate composite. It combines structural elements made from die-cast aluminium, thermoset resin and cast composite, and is divided up internally so each section of the speaker is operating in its own space. The dividers also brace the cabinet and are formed from laminated birch shelves installed to create non-parallel surfaces. The role of this cabinet, which is finished in a striking dark veneer with textured accents? According to CEO Lars Worre [see interview boxout, p43], it's to 'hold the drivers, be airtight, and shut up'.

It's also built to be relatively easy to position – DALI suggesting 3-5m between the speakers, 1-2m from the wall behind, and away from corners, while also advising against any toe-in if the set-up conforms to the classic 'equilateral triangle' layout. There's a KORE 'White Paper' covering, among other things, the brand's 'wide dispersion philosophy', and you can find it on the company website at *www.dali-speakers.com/en/products/dali-kore/dali-kore*. (Registration may be required.)

Executive summary? The company aims to optimise the dispersion characteristics of its designs so that direct and reflected sounds have a similar tonal character. What's more, the KORE is designed as a stable, relatively easy load for amplifiers, with a nominal impedance rated at 4ohm, a minimum of 3.2ohms at 72Hz, and a sensitivity given as 88dB/W/m [again, see PM's Lab Report, p45].

### THE BIG PICTURE

The KOREs, driven for my listening in PM's main room by Constellation's Centaur II 500 Stereo power amp [*HFN* Dec '19], had a sound to match their imposing presence. They created a big, impressive sonic picture with the Chicago Symphony Orchestra/Reiner recording of Dvorak's 9th [RCA Red Seal 82876 66376 2], allied to excellent orchestral dynamics and detail, despite not being quite the last word in soundstaging. In truth, this recording is a little bit 'big band' rather than having ultimate audiophile focus, but there's nonetheless fabulous speed and power – in the brass in particular – realised with ease by the KOREs.

There was solid imaging with Lake St Drive's cover of 'Automatic', from the *Fun Machine: The Sequel* EP [Fantasy FAN01870; see p94], with fine focus on Rachael Price's voice and a big bold, driving bass and drums, along with plenty of information in

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the rest of the group. The view of the deep, powerful vocals as she switches register between verse and chorus was insightful, and the speakers were just as impressive with the soulful piano opening of 'You're Still The One', with keys player Akie Bermiss on vocals adding bags of character. Meanwhile Price really excelled on 'Anyone Who Had A Heart', her dark vocals perfectly suited to the tone of the track.

There were more vocals, and more chances for the KOREs to shine, with The Unthanks' 'Waters Of Tyne' from the new *Sorrows Away* album [Rabble Rouser Records RRM024B]. The song was delivered with intimacy and simplicity, and with every word crystal-clear. In fact, in their clarity, these big speakers sound like much smaller ones, which is no backhanded compliment.

There's also good pace and lightness of foot here from speakers so large – not always a given. The John Wilson/Sinfonia of London recording of Harold Arlen's suite from *The Wizard Of Oz* [*Hollywood Soundstage*, Chandos CHSA5294] enjoyed the full big picture treatment, slipping from ominous brass to skipping strings without pause.

'Brass was joyous and the vocals tinglesome'

## STINGING SPEED

The KOREs are 'fast', too, with the Ben Liebrand mix of Sting's 'Englishman In New York' from the new expanded version of *Nothing Like The Sun* [A&M] crafted with speed and control in the bass and Mino Cinélu's detailed percussion, plus drama in the accompanying strings. Manu Katché's drums sounded great here, too, as did the sax solo by Branford Marsalis, while DJ MONK's 'hard dub' take on the usually delicate 'Fragile' really got those big, wood-chip infused bass units working.

Startling, too, were the David Bowie remixes and live takes from the *Moonage Daydream* soundtrack [Parlophone 5054197283970], but the real revelation was the way the KOREs nailed the 'small ensemble' feel to the original single version of 'Starman'. So yes, these towering speakers really can do intimate very well indeed. 'She Moved Through The Fair' from the Michael Wollny Trio's recent *Ghosts* album [ACT, ACT9956-2] is all subtle bass and a lot of delicate cymbal work behind a wonderfully present piano. The evocative-sounding KOREs maintained the fabulous soundstaging, and close-focused detail of all three performers, the piano sounding suitably percussive and the cymbals just hanging in space.

## MAGIC ACT

There's larger-scale drama from the 2022 Broadway cast recording of Sondheim's *Into The Woods* [Craft Recordings], where the KOREs did a thrilling job of keeping under control all the elements of the scene-setting 'Prologue'. Lots of clever wordplay and plot-development is going on here, and the speakers, driven by the Constellation Centaur amplifier, maintained a firm grip on proceedings, while still conveying the magical atmosphere of the piece as it darts between characters.

A greater sense of menace was evident in Iggy Pop's cover of Leonard Cohen's ⇨

**ABOVE:** Rendering of the KORE's component driver parts and structural elements, removed from the two-part cabinet. The hybrid tweeter and crossover are isolated from the bass as is the mid with its 'open-back transmission line'

## LARS WORRE

**DALI is justifiably proud of the extent of 'home grown' engineering inside its flagship loudspeaker. 'Every driver is designed and built in house,' says CEO Lars Worre. 'We even assemble the custom magnet systems and wind the coils, and although the mylar/etched film used in our planar tweeter is sourced from China, this speaker is still as Danish as it gets!'**

**The wood fibres in its bass and mid units are a DALI staple, its engineers having worked with this cone material for many years. 'These wood pulp cones do not have the damping of polypropylene, for example', says Lars, 'so it's like a wild horse that we have to tame! We work with the geometry and surround, adapting the shape, the amount and type of doping, the glue, *etc*, not to kill this liveliness with excess damping but to use its properties constructively, optimising the driver(s) for off axis listening'.**

**With the development of the KORE informed as much by extensive listening sessions as time spent in the lab, DALI was keen to ensure this huge speaker could sound 'small' and delicate when required. 'There's as much art as science in achieving a seamless sound with big multiway speakers', says Lars, 'so we don't subscribe to any one particular filter design – we are not idealists, we take the most practical route to deliver a better correlation between the direct and reverberant soundfield'.**

**And trickledown from all that's been learnt so far? The reduction in eddy current distortion from its 'double gap' drivers is already benefitting DALI's new series of in-wall/in-ceiling loudspeakers. PM**

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**LEFT: The 390Hz/2.1kHz/12kHz crossover is split between bass and mid, the beautifully machined 4mm/slotted terminals supporting bi-amping and bi-wiring. The woofer's 80mm-diameter reflex ports flare at the cabinet's rear**

'You Want It Darker' from the *Here It Is* tribute album [Blue Note 00602445659951]. Wow – this sounded good via the KOREs, as did Peter Gabriel's near-impression on his take on the title track, while Mavis Staples' reading of 'If It Be Your Will' was just spine-tingling, not least thanks to the great breathy sax solo by Immanuel Wilkins.

The KOREs also dazzled with the fabulous new *Bach: Orchestral Suites BWV 1066-1069* on Linn Records [CKD 666]. Again, the performance didn't rival the forensic viewpoint that some loudspeakers offer, but instead majored on a big, bold and crisply detailed impression of real musicians performing in a real space, with absolute communication of the music. The brass and strings were joyously delightful, as were the still tinglesome vocals of The Manhattan Transfer on the orchestra-backed version of 'Twilight Zone/Twilight Tone' from *Fifty* [Craft Recordings CR05249]. This track has a wonderfully ethereal sound that's more than a match for the original release from 50 years ago, with the added 'threat' of orchestral effects, such as the rumbles of thunder. The KOREs allowed the piece to swing while at the same time conveying a palpable sense of unease.

## VIVID VIEW

And presence is what these speakers do so well, as is clear with Vicky Chow's first set of Philip Glass études [Canteloupe Records Bandcamp download]. It's not just in the way each note lands and decays, but in the realism of the instrument in the round. The same is true of Foy Vance's 'Republic Of Eden' from his *Signs Of Life: Live From The Highlands* [Atlantic Records] – the sound is so simple, but presented by DALI's KOREs with such a vivid view of the performance.

## HI-FI NEWS VERDICT

**Big, bold and dominating, DALI's flagship KORE loudspeakers are capable of projecting sound with excellent focus, detail and, of course, acoustic power. Moreover, while they will deliver all the scale of orchestral music with breathless ease, they also have finesse, speed and resolution on their side. If you have the real estate and finances to entertain the KOREs, they rank as one of high-end hi-fi's 'essential listens'.**

Sound Quality: 88%

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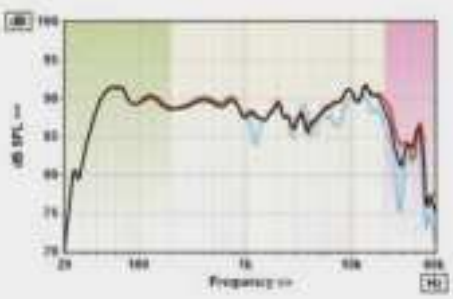
# LAB REPORT

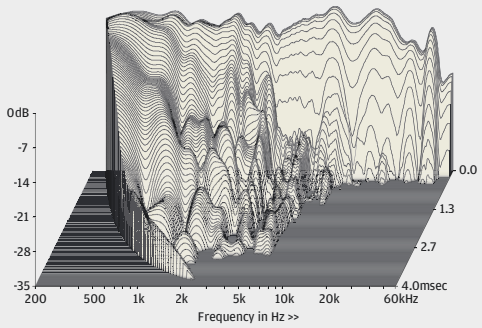
## DALI KORE

DALI's specification for the KORE was largely met on test. Its complex crossover maintains a sub-9ohm impedance from 46Hz-12.4kHz, hitting a 3.2ohm minimum at 67Hz (a nominal 4ohm) which, with max/min phase angles of +36°/–65° (+44°/10Hz), results in a minimum EPDR of 1.2ohm/58Hz. However with a controlled ±10° impedance phase (and >5.0ohm EPDR) from 200Hz-10kHz, the KORE remains an easy drive for all likely partnering amplifiers. Sensitivity at 87.8dB/1kHz and 88.2dB/500Hz-8kHz is not too far off the rated 89dB and, with its max. 1.5kW amplifier rating, suggests that exceptional SPLs will be achievable at very low distortion (sub-0.5% from 50Hz-20kHz at 90dB SPL). The magnetically-attached grille has an influence through mid and presence [blue trace, Graph 1] and should be removed, though the U-shaped mid and boosted presence/treble of the 32mm dome [black/red traces, Graph 1] flattens out with increased listening distance and toe-out (up to 20° off axis).

The ±2.9dB response errors occur between 4-13kHz but pair-matching is a creditably tight 0.5dB (200Hz-20kHz). This is tricky to achieve with a complex multi-way system, although the paper pulp/wood fibre bass and mid drivers themselves are not entirely clean of breakup modes [see Graph 2]. By contrast the 32mm dome/55mm planar 'EVO-K' hybrid tweeter array is impressively free of any aggressive breakup. The upper and lower bass units both have a 42Hz-112Hz (–6dB) bandpass, peaking at 63Hz, and port tuning of 24Hz, but the lower unit extends more gently out to 300Hz (–10dB). Drivers and ports combine to yield a deep, diffraction-corrected extension of 28Hz (–6dB re. 200Hz). **PM**



**ABOVE: Response inc. nearfield summed driver/port [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red; w. grille, blue**




**ABOVE: Some modes are revealed from the paper/wood fibre drivers but EVO-K hybrid tweeter is clean**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Sensitivity** (SPL/1m/2.83V – 1kHz/Mean/IEC) | 87.8dB / 88.2dB / 86.6dB |
| **Impedance modulus: minimum & maximum** (20Hz–20kHz) | 3.16ohm @ 68Hz<br>26.4ohm @ 40Hz |
| **Impedance phase: minimum & maximum** (20Hz–20kHz) | –65° @ 46Hz<br>+36° @ 33Hz |
| **Pair matching/Resp. error** (200Hz–20kHz) | 0.5dB/ ±2.9dB/±2.9dB |
| **LF/HF extension** (–6dB ref 200Hz/10kHz) | 28Hz / 24.3kHz/26.9kHz |
| **THD 100Hz/1kHz/10kHz** (for 90dB SPL/1m) | 0.2% / 0.06% / 0.3% |
| **Dimensions** (HWD) / **Weight** (each) | 1675x448x593mm/148kg |

Direct-drive turntable with arm and cartridge
Made by: VPI Industries Inc., New Jersey, USA
Supplied by: Renaissance Audio, Scotland
Telephone: 0131 555 3922
Web: www.vpiindustries.com; www.renaissanceaudio.co.uk
Price (including arm and cartridge): £36,500



# VPI Avenger Direct

Having rolled out its first direct-drive deck in the HW-40 Anniversary, VPI has grafted its proven motor design into the flexible Avenger platform, complete with arm and MC

Review: **Adam Smith** Lab: **Paul Miller**

We may have a first here as VPI offers its Avenger turntables in belt-drive, rim-drive and direct-drive guises, the latter £36,500 Avenger Direct bringing the range to a total of four models. The genesis of the Avenger Direct was bittersweet, however, because it was inspired by, and has subsequently 'leap-frogged' over, the long-awaited VPI Vanquish flagship. In the meantime, the launch of the £100,000+ Vanquish remains on hold...

The real-world predecessor to the New Jersey-based company's Avenger Direct, in motor technology terms, was the HW-40 [*HFN* Apr '19] but, as VPI says, 'it was apparent that advances had been made in not only the available drive electronics, but also in the materials and software control'. VPI has continued to make running production improvements to the basic rotor and stator supplied by a US company specialising in aerospace, defence, robotics and precision industrial motion systems. The parts have been chosen for their promise of high torque and smooth, cog-free operation thanks to an overlapping V-shaped coil configuration.

## CONFIDENCE TRICK

The Avenger Direct's stator is mounted in a housing machined from a solid billet of T6061 aluminium. This helps to absorb any small vibrations into the main chassis, which comprises a sandwich of more aluminium between two acrylic slabs, all separated by layers of additional damping. The rotor, meanwhile is press-fitted into an aluminium 'sub-platter' onto which the main platter locates. Unusually, however, the spindle is not part of the rotor, but part-and-parcel of the platter. This demonstrates extreme confidence on the part of VPI's CNC-machining, as any irregularities in concentricity between the main bearing and the spindle will be immediately obvious. In practice, the concentricity of the spindle looks faultless!

Of course, as the Pirelli tyre brand used to tell us, 'power is nothing without control'. To this end, the rotor hub features an encoder providing 2500 counts per revolution of positional feedback to the control servo. At 33.3rpm this equates to 1388 pulses per second (1.39kHz), which is more than adequate for exceptional speed control accuracy [see PM's Lab Report, p51]. Working with a company that has over 20 years' experience in motor drive electronics, VPI claims that its ambitions for increased torque and improved stability have been exceeded, and without transmitting more noise into the playback chain.

> 'This deck will pull you into the heart of your vinyl collection'

The deck features a trio of pointed feet which locate into two-part isolation pucks. These not only protect the mounting surface but provide excellent isolation in both vertical and horizontal axes. Each foot is adjustable, supporting three chunky 'towers' that rise above the top of the plinth. Three separate arms may be fitted to the Avenger Direct – each armboard outrigger looping over the top of a column before being adjusted for height and rotation and then firmly clamped into place.

## AVENGER ASSEMBLED

As part of the package, VPI's deck comes with the gimbal bearing version of its 12in Fatboy arm, which normally retails for £5400, plus £1800 for the VTA

**RIGHT: The 12in 'Fatboy' arm features a 3D printed tube, adjustable VTA, thread-and-cantilever bias and lockable counterweight. Up to three arms may be adjusted and locked into position around the Avenger's tripod 'towers'**

adjustment tower and metal armboard. Additional arms require the purchase of more armboard outriggers, the £600 list price including the cutting service for your choice of arm hole pattern.

The 12in Fatboy uses a one-piece 3D-printed armtube and headshell, the tube shape adapting from front to rear to aid resonance dissipation. At the rear, it's set into an aluminium tube that passes through the gimbal and terminates in the counterweight stub. A black knob on this end adjusts the position of the weight for tracking force, and although this is uncalibrated, VPI does include a digital stylus force gauge. This, together with the alignment gauge and adjustable arm boards, makes cartridge setup a breeze.

The arm's internal wiring is Nordost Reference and this terminates via a miniature LEMO connector into a small junction box with phono output sockets and earth terminal [see pic, p51].

## TROUBLE-FREE

For review, the Avenger Direct was supplied with VPI's new £2550 Anniversary cartridge, made by Miyajima in Japan and based on the Takumi model. This has a weight of 8.9g, a claimed output of 0.22mV, and features an elliptical stylus on the end of an alloy cantilever [see PM's lab Report, p49]. The deck also comes with a Signature stainless steel centre weight and periphery ring clamp (typically £1560).

Setup was trouble-free and operation is a doddle. Speed selection is via illuminated buttons on the front, and the deck both starts and stops promptly and without fuss. The large control on the arm base makes VTA adjustment easy, and the action is so smooth that you can even twiddle 'on the fly' with no fear of disaster. The only hiccup I had was a soft background hum that could not be remedied using an earth lead from my preamp. Instead I had to use a crocodile clip on the metal chassis of the turntable. A proper earth link between deck and arm output box is needed here.

## LOVE AND THUNDER

Once up and running via a Yamaha C-5000 preamplifier [*HFN* Aug '20], and the phono stage set for MC and 300ohm loading, I was instantly reminded of what I loved about the VPI Prime 21+ [*HFN* Mar '21]. The Avenger Direct has the same big, all-encompassing soundstage as its smaller brother, but adds an effective sense of forward projection out to the listener that

**ABOVE: The Avenger Direct has an integral PSU and motor, and offers 45/33.3/Off pushbutton controls. Adjustable spikes fit into 'pneumatic suspension' feet while VPI's peripheral 'ring clamp' adds to the platter's flywheel effect**

## DIRECT DRIVE REVIVED

**The idea of driving a turntable platter directly without an intermediate belt or idler is far from a new one. Very early examples, including the Garrard 201 [*HFN* Jan '08] with its induction motor, can trace their lineages back to the 1930s. That said, the first deck that brought about the modern electronic era of direct-drives was Technics' original SP-10, from 1970 [Vintage Review, *HFN* Nov '10]. Direct-drive's heyday lasted through the 1970s and early 1980s with some truly astounding designs. Technics' original SP-10 hit its ultimate Mk3 guise in 1981, using a motor shared with the SP-02 cutting lathe, joining contemporaries including the Trio L-07D, Sony's mighty PS-X9 [*HFN* Mar '17] and Denon's even mightier DP-100M also in 1981.**

**These vinyl-spinning behemoths straddled the professional and domestic markets, offering massive torque to bring their platters up to speed within a fraction of one rotation. Other designs such as the Pioneer P3, JVC QL-Y5F and Japan-only Yamaha GT-2000 were aimed more at the domestic hi-fi scene and backed off the torque very slightly, reasoning that few of these models would see pro use. VPI's Avenger Direct joins the new generation of direct-drive decks inspired, in part, by the restoration of the SL-1200 by Technics [*HFN* Jun '16].**

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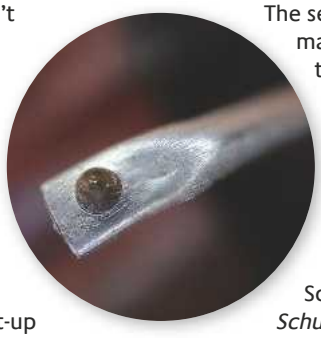
**RIGHT: Whether *Lignum vitae* (Palo Santo/Ironwood) or *Brosimum paraense* (Bloodwood), the hard shell of VPI's Anniversary MC is further reinforced with threaded metal inserts**

the Prime couldn't quite master. The result is that the deck puts you right at the heart of the performance.

It also has that relaxed, assured confidence to its music-making that seems to be a VPI trait. The clearly superlative direct drive system not only adds a subtle sense of commanding weight to proceedings, but also eerie silences that greeted me inbetween tracks and helped capture the essence of everything that passed under the stylus. Generally I'm a big fan of listening at 'healthy' levels, but the Avenger Direct seemed to gently point out that, if I didn't want to, then this sort of behaviour wasn't necessary. With even the subtlest detail from the quietest grooves the MC Diamond retained its sense of ebullience and punch.



I'll admit to making two changes to the set-up fairly early on in my time with the turntable. The first was to try out VPI's bundled 'periphery clamp' accessory – and I soon realised that it would be staying in place with each record that I played. Not only does it have the useful side effect of flattening any slightly wavy outer edges of an LP, but it made a surprising, beneficial difference to both midrange clarity and low-end solidity. With the ring clamp employed, bass notes stopped more quickly and gained a better sense of separation, giving a greater feeling of tightness to low-end rhythms.

## SOFTLY SPOKEN

The second change I made was to swap out the cartridge. The Miyajima-based VPI Anniversary has a sweet nature that suits the likes of soft, smoky jazz to a tee. Fed with 'Love Dance' from Diane Schuur's *The Diane Schuur Collection* [GRP Records GR-9591], it made a good case for itself, offering up an emotive, warm performance. Unfortunately, outside of this fairly narrow window I found the cartridge wanting. None of the adjustments I made to VTA, tracking force, azimuth or loading made it sound anything other than a little too soft and vague for my tastes. Swapping it out for my regular Ortofon Cadenza Black MC transformed the performance of the Avenger Direct and showed what this deck and arm were capable of.

Now that smoky jazz still gave me a warm tingle of pleasure, but the violins of The Locrian Ensemble playing the 'Allegro' movement from Mendelssohn's *Octet* [Chasing the Dragon VALLP015] had a proper sense of bite and realism to them. ➲

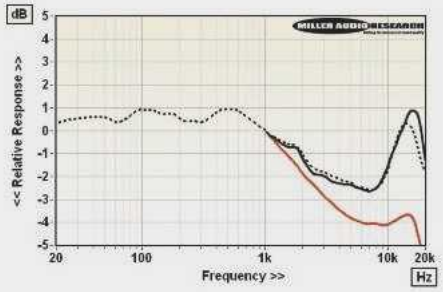
**ABOVE: Elliptical stylus is shank-mounted onto a crimped alloy cantilever**
**LEFT: Colour-coded cartridge pins are close-spaced but offer a snug fit**

# LAB REPORT

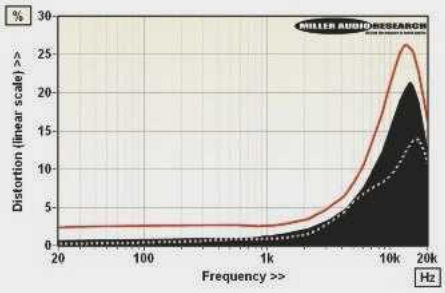
## VPI ANNIVERSARY BLOODWOOD

Produced for VPI by Japan's Miyajima Laboratory, the £2550 'Bloodwood' looks a close cousin to the Takumi, sharing the same bonded elliptical stylus and continuous alloy cantilever rather than the alloy-tipped cactus spine that underpins the costlier Saboten model. The Bloodwood also looks to employ Miyajima's cross ring coil structure, for which various claims are made, including reduced distortion, although the unequalised 3.4% (re. 1kHz at 5cm/sec) and lateral/vertical sweeps peaking over 20% (re. –8dB re. 5cm/sec) are higher than average [see Graph 2, below]. Otherwise, output is bang-on the specified 0.22mV at 219µV (re. 1kHz at 5cm/sec) with a fine 0.2dB channel balance from a ~16ohm impedance, requiring a low-noise MC headamp or transformer/MM preamp.

The crimped alloy cantilever and bonded diamond achieve a 26° VTA and while the 2.3g downforce is quite high – and the 16-18cu compliance not especially 'stiff' for a typical MC – the Bloodwood is only a moderate tracker, achieving ~65µm via the right channel before letting go at the penultimate +15dB groove modulation (re. 315Hz/5cm/sec) at ~2 and ~7% THD (left/right). The specific resonances and damping properties of the cantilever and mechanism are revealed in the extended but slightly erratic HF response [Graph 1, below] which shows a broad –2dB mid/presence depression before picking up again at 17-18kHz. The asymmetry revealed between lateral and vertical cuts [solid black vs. red trace, Graph 1] suggests that in-phase/central images (typ. vocals) will enjoy a bolder image than detail at the extremes of the soundstage. Whatever else might be said of VPI's choice of pick-up, it certainly brings a splash of colour! **PM**




**ABOVE: Freq. resp. curves (–8dB re. 5cm/sec) lateral (L+R, black) vs. vertical (L–R, red) vs. stereo (dashed)**




**ABOVE: Lateral (L+R, black), vertical (L–R, red), stereo (dashed) tracing and generator distortion (2nd-4th harms) vs. freq. from 20Hz-20kHz (–8dB re. 5cm/sec)**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Generator type/weight** | Moving-coil / 8.9g |
| **Recommended tracking force** | 22-24mN (23mN) |
| **Sensitivity/balance** (re. 5cm/sec) | 219µV / 0.23dB |
| **Compliance** (vertical/lateral) | 18cu / 16cu |
| **Vertical tracking angle** | 26 degrees |
| **L/R Tracking ability** | 70µm / 65µm |
| **L/R Distortion** (–8dB, 20Hz-20kHz) | 1.4-18% / 0.8-14% |
| **L/R Frequency resp.** (20Hz-20kHz) | +0.8 to –4.5dB / +1.0 to –2.5dB |
| **Stereo separation** (1kHz / 20kHz) | 33dB / 13dB |

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**ABOVE: More flexibility is offered in the form of VPI's 'on-the-fly' VTA/arm height adjustment, with graduated dial, just as aftermarket RCA interconnects are easily accommodated via the exposed gold-plated terminals and ground screw**

The horseshoe-shaped layout of the performers was also uncannily realistic as the Avenger Direct once more set up an almost holographic sense of imagery.

## IN FINE VOICE

Solo vocalists also benefitted hugely from the Avenger Direct's abilities. The Kari Bremnes' track 'A Lover In Berlin' from her *Norwegian Mood* album [Kirkelig Kulturverksted ARS-FXLP 221] seemed to soar free and unfettered from my speakers. Miss Bremnes' voice was fabulous, larger than life and absolutely rock-solid in the centre of the soundstage, with a majestic sense of atmosphere and space accompanying it. The fine percussive backing effects were also sharply defined and easy to focus on, but never intruded on the main action. Everything was expertly underpinned by a taut and fulsome acoustic bass with a crystal-clear note structure. Superb.

Across the lower bass registers the Avenger Direct/Fatboy combo played a masterful hand, dealing back anything I cared to throw at it with weight and confidence. Whether it was the punchy synths on Kylie Minogue's infectious 'Can't Get You Out Of My Head' from her *Fever* LP [Parlophone 0190295846248], or the thunderous organ work of Bach's 'Toccata and Fugue' from the *Invitation To Denon/PCM Digital Classics Part 2* record [Nippon Columbia ST-6011], VPI's deck sailed through without breaking a sweat. At all times there was a reassuring mass and momentum to the sound, combined with an ease and effortlessness that was captivating.

Above all, it was the balanced 'voyage of discovery' the Avenger Direct would reveal from a performance that typically gripped my attention. Odd effects tucked away in the background of tracks suddenly became much more prominent but without dominating. Taylor Swift's new album *Midnights* [Republic Records 2445832583] features a whole host of these moments, and I kept finding myself looking up from my notes and thinking 'What was that?'.

## VINYL MARVEL

Ultimately, VPI's Avenger Direct leaves very little unearthed in terms of all-round performance, but it's the way in which it knits the music together into a cohesive whole that's the real ace up its premium sleeve. This impressively engineered turntable will pull you into the heart of your record collection and keep you there to the wee small hours.

## HI-FI NEWS VERDICT

**The VPI Avenger Direct is a masterpiece of the turntable art – intelligently designed, exquisitely engineered and sonically all but beyond reproach, while work on the direct-drive system has paid off handsomely. Indeed, the innovation displayed in VPI's deck *and* arm design is ultimately realised in this captivating sound. Frankly, I've heard few turntables that simply get out of the way of the music so effectively.**

Sound Quality: 88%

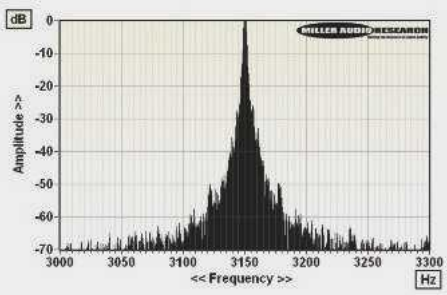
0 - - - - - - - - - 100

# LAB REPORT

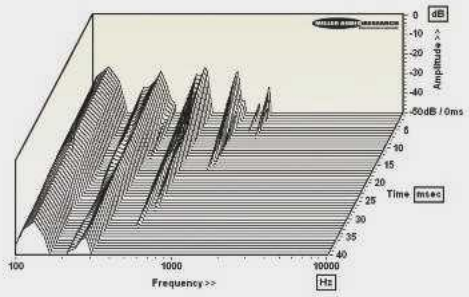
## VPI AVENGER DIRECT/FATBOY

While Technics may have kick-started a mini 'direct-drive revolution', inspiring both Brinkmann with its Taurus and Bardo, and Thorens with the TD 124 DD [*HFN* Jul '21], VPI has also adopted a belt-less drive in earlier designs including its HW-40 Anniversary [*HFN* Apr '19]. The Avenger Direct uses the same 'non-ferrous' motor design with a claimed 2.68Nm/sec torque, bringing the 11kg platter, complete with peripheral ring clamp, up to speed in a little over one second. Absolute speed was an imperceptible +0.03% fast in our sample while peak wow and flutter [Graph 1] is just a little 'tighter' here at 0.02% and 0.03%, respectively, than we saw in the HW-40. Rumble, on the other hand, is about 2dB higher at –71dB through-groove (slightly poorer again at –70dB with the LP weight in place) but far closer to the HW-40 at and –73dB via the motor/bearing itself.

First seen in our review of the HW-40, the partnering 12in Fatboy tonearm features a '3D printed' armtube and integral headshell mounted into a robust gimbal bearing, offering a very low <10mg friction. The lightweight polymer/resin tube material contributes to a moderate 14g effective mass for the arm as a whole, while its variable cross-section (a chamfered square at the bearing to a rounded triangle at the headshell) pushes the first bending mode up to a creditable 130Hz. Harmonic and possible twisting modes appear at 225Hz and 280Hz, followed by more rapidly dissipated modes at 470Hz, 550Hz and 890Hz [see Graph 2, below]. The range of these sharp resonances is not dissimilar to those we've observed from various 'carbon fibre' armtubes, but they are generally better damped by VPI's choice of tube material here. **PM**




**ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division)**




**ABOVE: Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Turntable speed error at 33.33rpm** | 33.34rpm (+0.03%) |
| **Time to audible stabilisation** | 1-1.5 seconds |
| **Peak Wow/Flutter** | 0.02% / 0.03% |
| **Rumble** (silent groove, DIN B wtd) | –71.0dB (–70.2dB with weight) |
| **Rumble** (through bearing, DIN B wtd) | –72.9dB |
| **Hum & Noise** (unwtd, rel. to 5cm/sec) | –58.4dB |
| **Power Consumption** | 5-25W (4W standby) |
| **Dimensions** (WHD) / **Weight** | 550x250x425mm / 28kg |

Low output moving-coil pick-up cartridge
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Price: £7349



# Ortofon MC Diamond

As the 'Anna' is dropped from Ortofon's MC Diamond, its new flagship retains the sintered titanium body and diamond cantilever but adopts a Verismo-like suspension...
Review: **Adam Smith** Lab: **Paul Miller**

It's long been said that 'diamonds are a girl's best friend' but, according to Ortofon, they also have the potential to be the number one chum of any vinyl fan. While diamonds have been used for styli for decades, few manufacturers have the skill or, indeed, the budget to implement them elsewhere. Enter the Ortofon MC Diamond – the company's new £7349 flagship low-output moving-coil that features not only a diamond stylus, but also a diamond cantilever.

Now, if you're thinking that this cartridge and name seem familiar, then you wouldn't be wrong because the MC Diamond is the third generation of a design that first saw the light of day in 2012. This was the MC Anna [*HFN* Oct '12], dedicated to the famous Russian operatic soprano, Anna Netrebko. This original cartridge sported Ortofon's Replicant 100 stylus profile on a boron cantilever and remained in pole position until 2018 when the limited edition MC Century, developed to celebrate Ortofon's 100th birthday, knocked it off the top spot.

**LEFT: While the design of the MC Diamond's generator is based on the MC Anna Diamond, including diamond cantilever and polished 'Nude Ortofon Replicant 100' stylus, the 'WRD' suspension takes its cues from the newer MC Verismo**

## JEWEL IN THE CROWN

Skip ahead to 2019 and the technology that made the MC Century so special was trickled into the MC Anna Diamond [*HFN* Oct '19]. This swapped the boron cantilever for a diamond rod and moved the company's game forward once more. In 2022, the association with Ms Netrebko ended but it's fair to say that Ortofon's new MC Diamond is far from just an MC Anna Diamond with a word crossed out...

Retained from the previous model are the Replicant 100 stylus and diamond cantilever. As it's impossible to 'cut' a cantilever and stylus as a one-piece item, the two must be glued together – a feat achieved here with extreme delicacy [see magnified pic, p53]. Also, the MC Diamond's outer shell and generator are largely unchanged aside from putting on a little extra weight at 17.5g. The cartridge body is made from titanium, laid down in fine layers using Ortofon's Selective Laser Melting (SLM) process, analogous to 3D printing, but using metal. This allows the density of the material to be adjusted as it is laid down, optimising the damping properties of the body. Any resonances, within the shell or travelling in via the tonearm, are also combatted by the thermoplastic elastomer that forms the bottom third of the MC Diamond's body.

'Synth notes are blessed with a speed and immediacy'

## SPECIAL RELATIONSHIP

The motor system is still based around a non-magnetic armature that extends beyond the coils, which are wound with ultra-pure OFC wire. The cartridge also still uses Ortofon's WRD (Wide Range Damping) system for the armature, where a platinum disc is sandwiched between two absorbent rubber pads with differing properties. However, in the MC Diamond, the rubber compound has been changed to that developed for the MC Verismo [*HFN* Mar '22] and is based on what's described as a 'Multi Wall Carbon Nano Tube' material. The manufacturer claims that this allows better control of the relationship between compliance and damping, improving stability of the cantilever and therefore tracking ability [see PM's Lab Report, p55].

Ortofon supplies the cartridge in a matt white wooden presentation box that gives plenty of space around it and a generous grip to lift it out of the mounting plate. Pricey cartridges in tiny boxes are the stuff of nightmares, but Ortofon has made the MC Diamond as user-friendly as possible here. Also included in the box are

**ABOVE: Ortofon's presentation case includes a bag of mounting hardware and instructions. It recommends the moulded stylus guard be put in place whenever the MC Diamond is not in use**

**RIGHT: The MC Diamond's titanium body and neodymium, iron and cobalt magnet system contribute to its significant 17.5g weight. The low-to-moderate compliance suspension means a low-to-medium effective mass arm is preferred**

a screwdriver and fixing hardware, a set of headshell leads and a stylus brush, all in a swanky cloth bag.

The MC Diamond's body has tapped mounting holes set into the upper surface and this, combined with the chunky shape, means that fitting it is less scary than you might expect. In addition, the stylus guard is large, solid and easy to fit and remove, which is a great relief. However, that weighty 17.5g body – plus a further 1g or so for the mounting hardware – will be at the very upper end of what most tonearms will accommodate. My trusty SME V only just balanced it and the 12in VPI Fatboy tonearm that I used for most of my listening with the MC Diamond required some extra ballast at the rear. In addition, those rounded sides do make cartridge alignment a little trickier than some.

Don't be tempted to skimp here, though: if you pay proper attention to every aspect of its alignment and setup, then the results are nothing short of astonishing. Mounted on this long 12in version of VPI's Fatboy arm on the VPI Avenger Direct turntable [see p46], and after a good hour or so of experimentation, I found its sweet spot to be at 2.7g tracking force with the arm ever so slightly down below horizontal at the rear.

## HAIR-RAISING HI-FI

Set up like this, I was in for a big surprise. I'm used to occasional cartridges with big, deep low ends, and others with lithe upper bass offering glorious levels of detail. I can name cartridges that create walk-in soundstages and have the sort of midrange insight that has the hairs on your neck standing on end. I can also recall favourite transducers that offer breathtaking clarity, and the promise they could securely track pretty much anything short of a mangled vinyl disaster. And the Ortofon MC Diamond? Put simply, it does all of the above, and to a level of accomplishment that is quite astonishing.

I don't think I've heard another pick-up so effortlessly gifted across the board. Admittedly, if you prefer a sonic signature that errs towards a more romantic, warm and soft sound, then Ortofon's latest might not be your cup of tea. Then again, if you really want to hear what's in your precious vinyl grooves, you should make sure you audition the MC Diamond.

Even better, this flagship cartridge does its work unperturbed by record dust and surface noise. I cannot begin to guess what witchcraft Ortofon has worked on its Replicant 100 stylus, but it shrugs pops and clicks aside with disdainful ease. This means that, at the top end, there's exceptional detail retrieval.

All too often, cartridges can fool you into thinking they're unearthing plenty of musical information through a major rise in top-end output that soon becomes wearing; not so the MC Diamond. Yes, this has a gentle lift in output at very high frequencies, but this just serves to open up its sound. On 'Raising Venus' from Malia and Boris Blank's album *Convergence* [Universal 3740593-2], vocal sibilants were impeccably clean, percussion completely free of 'splash', and the 'tinkling' background synthesiser effects came out of the depths immaculately.

## SHINE ON...

Then there was Malia's voice to savour, which oozed emotion and subtlety of inflection. If you want to be in absolutely no doubt as to what a particular singer or an instrument sounds like, then look no further; the MC Diamond has the gift of generating a wide but incredibly focused soundstage that sets up a huge 3D sonic picture. To call this performance 'immersive' would be something of an understatement.

A part of this is down to the sheer dynamic range the cartridge seems capable of unearthing. Helped by its low ⇨

## POLISHING THE DIAMOND

**In the quest for the ideal cantilever – one that's both infinitely stiff and has vanishingly low mass – only those cartridge brands with both the budget and micro-engineering resources can contemplate the most extreme of options. Diamond fits the bill in terms of stiffness versus density but the stylus – a 5/100µm Ortofon Replicant in this instance – can only be glued in place rather than mounted through a hole [see inset picture]. Achieving this with precision, and without significantly adding to the tip mass, represents yet another challenge but one met with confidence and success by Ortofon's engineers. Of course, every cantilever 'rod' brings a series of bending and twisting modes that interfere, or at least modulate, the motion of the coils relative to the stylus in the groove. Diamond moves any such resonances to very high frequency but Ortofon's latest MWCNT (Multi Wall Carbon Nano Tube)-infused polymer aims to optimise the coupling between stylus and coils by 'tuning' its behaviour at the fulcrum – the pivot point – that lies inbetween. Has it worked? See our Lab Report, p55... PM**

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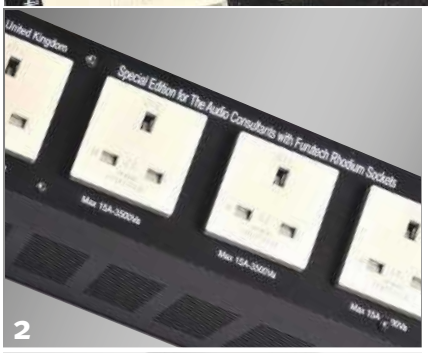


2

3

4

# Puritan Audio Special Edition mains purifiers

Puritan Audio Laboratories and The Audio Consultants have developed an upgrade to their excellent mains purification products. The prime reason was to improve the socket grip with audiophile power cords that utilise quality mains plugs. The upgrade incorporating Furutech chassis sockets has resolved the grip issue, but it has also had the additional benefit of a major uplift to the sound quality.

These are available as Special Edition versions of all Puritan Audio products from the Power Strips to the Studio Master Purifiers. Both Furutech UK and Schuko socket variants are available in all models.

The main changes are to the sense of scale and to the frequency bandwidth. The sound stage is enlarged in all dimensions, bass is more extended and has more texture. Clarity is increased so that finest details are resolved readily, and images are more focussed. Dynamics and transients are notably faster.

All Puritan Audio models are available for a home trial: the Special Edition versions with the Furutech upgrades, and the standard versions without.

**The Puritan Audio Special Edition mains purifiers are available exclusively from The Audio Consultants.**

**1** PSM1512 SE UK £3520
**2** PSM156 SE UK £1960
**3** PSM136 SE Schuko £1550
**4** PS106 DC SE UK £1240

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**RIGHT: The MC Diamond's pins are clearly marked and separated while the exposed cantilever aids cueing accuracy despite the rotund body shape**

levels of surface and groove noise, the MC Diamond faithfully captures everything from a whisper to a roar – you don't need wild and bombastic material to hear it strut its stuff, nor do you need to be listening at high levels. On the other hand, when you do decide to crank something noisy right up, the composure exhibited by the MC Diamond is remarkable, all while it throws you squarely into the mosh pit.

## TAKING CHARGE

Also remarkable is the way the MC Diamond treats less than favourable recordings. The 1979 set *Time Passages* [RCA PL25173] has always been one of my favourite Al Stewart albums, but I perhaps don't play it as often as I should thanks to the rather weedy and lightweight sound of my original copy. However, with Ortofon's cartridge in charge, while it left no doubt that this wasn't Emmy-grade mastering I was hearing, it pulled plenty out of the mix. Stewart's lead vocals on the title track stood clear of the rich backing instrumentation and, for the first time, the alto saxophone solo didn't have me wincing ever so slightly at its stridency.

To clarify further, the MC Diamond might not be able to quite turn a leaden recording into gold, but I'll wager not many cartridges have come this close to sonic alchemy so far. And the bass? Oh my goodness, the bass. The sheer power and weight that this pick-up offers up had me grinning from ear to ear. The synth notes in the Malia and Boris Blank track were truly eyeball-rattling, but blessed with a speed and immediacy that made it clear this wasn't just a big low-end output blundering along.

More alarmingly, the pipe organ on 'Julsång' from Bertil Alving's 1976 masterpiece *Cantate Domino* [Torsten Nilsson *et al*; Proprius PROP07762] had the hairs on my arms moving in sympathy when played at somewhat un-neighbourly levels. Fortunately, all this power was accompanied once again by the sort of detail and low-end clarity that one rarely finds together. The bass guitar that backs Jenny Jones on 'Brighton Pier', from her *Blessed Northern Daughter* EP [Go! Discs GODX 103], was supple and tuneful to the point that one or two 'extra' notes I often miss were brought into easy focus. And when the jangling electric guitars ramped up towards the end of the piece, Ortofon's MC Diamond kept that bassline clean and distinct, which is something of a rarity on this recording.

## LAYING A FOUNDATION

As a vinyl-lover who has always maintained that, if you get the bass wrong, it's difficult to get everything else right, the MC Diamond lays just about the best sonic foundation I have encountered. I am going to sorely miss this sparkling cartridge when it goes back!

## HI-FI NEWS VERDICT

**With the MC Diamond, Ortofon has advanced the cartridge game once more. Improving on the already sublime MC Anna Diamond was a big ask, but the company has done it, coming up with a transducer that is nothing short of exceptional in every respect. Its price will sadly put it out of reach for most, including yours truly, but I can safely say that, in sonic terms, this Diamond is definitely my new best friend.**

Sound Quality: 90%

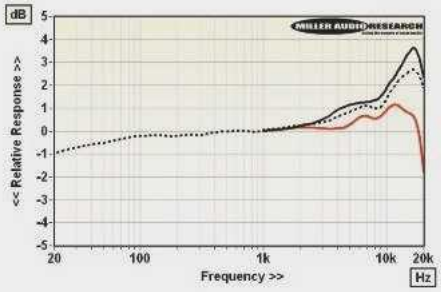
0 - - - - - - - - - 100

# LAB REPORT

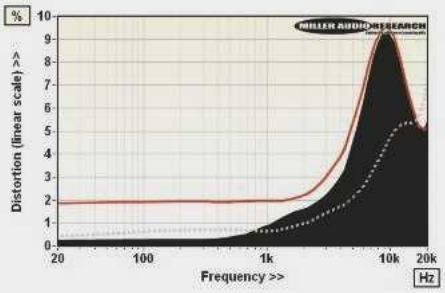
## ORTOFON MC DIAMOND

On the face of it, every performance difference between the MC Anna Diamond [*HFN* Oct '19] and this latest flagship boils down to the mechanical (compliance and damping) properties of the latter's suspension polymer [see boxout, p53]. That and the increase in bodyweight of the sintered titanium shell from a high 16g to an even higher 17.5g. All else being equal, reducing the suspension compliance would keep the tonearm/cartridge resonance 'on track' but Ortofon has actually relaxed lateral compliance from 10cu to 13cu in the MC Diamond while simultaneously recommending a *higher* 2.6g downforce, up from the Anna Diamond's 2.4g. Arm matching is subsequently a little trickier – lower effective mass types being preferred – while tracking is fractionally less secure, the MC Diamond holding on to the 70-75µm test tracks before letting go on the +18dB groove modulation (315Hz lateral cut, re. 11.2µm) where THD increased to ~6%. It is, however, still a very fine tracker!

The low 168µV (re. 1kHz/5cm/sec) output is closer to that of the original MC Anna [*HFN* Oct '12] than the Anna Diamond's 207µV but the uniformity of the generator's magnetic field, and symmetry of the cantilever/coil suspension, maintains a superb balance between lateral (L+R), vertical (L-R) and stereo responses [Graph 1, below] and lateral, vertical and stereo distortion profiles [Graph 2]. It's here that we see the benefits of the new suspension with reduced distortion, down from a peak of 11% to 7% at 20kHz (re. –8dB re. 5cm/sec), and a more extended response, now +1.9dB/20kHz up from –0.7dB/20kHz. In the MC Diamond, Ortofon is squeezing every last drop of performance from a proven moving-coil generator. **PM**




**ABOVE: Freq. resp. curves (–8dB re. 5cm/sec) lateral (L+R, black) vs. vertical (L–R, red) vs. stereo (dashed)**




**ABOVE: Lateral (L+R, black), vertical (L–R, red), stereo (dashed) tracing and generator distortion (2nd-4th harms) vs. freq. from 20Hz-20kHz (–8dB re. 5cm/sec)**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Generator type/weight** | Moving-coil / 17.5g |
| **Recommended tracking force** | 25-28mN (26mN) |
| **Sensitivity/balance** (re. 5cm/sec) | 168µV / 0.38dB |
| **Compliance** (vertical/lateral) | 10cu / 13cu |
| **Vertical tracking angle** | 26 degrees |
| **L/R Tracking ability** | 75µm / 70µm |
| **L/R Distortion** (–8dB, 20Hz-20kHz) | 0.9-8.2% / 0.7-7.3% |
| **L/R Frequency resp.** (20Hz-20kHz) | –0.9 to +2.7dB / –0.7 to +3.2dB |
| **Stereo separation** (1kHz / 20kHz) | 33dB / 26dB |

Monoblock hybrid power amplifier. Rated at 600W/8ohm
Made by: PS Audio, Boulder, Colorado
Supplied by: Signature Audio Systems
Telephone: 07738 007776
Web: www.psaudio.com; www.signaturesystems.co.uk
Price: £30,000 (pair)



# PS Audio BHK M600

PS Audio grows its hybrid tube/MOSFET amplifier range with a new flagship that's the crowning achievement of the late and hugely respected designer Bascom H King

Review: **Mark Craven** Lab: **Paul Miller**

Until this year, the flagship power amplifier in PS Audio's stable was the BHK Signature 300 [*HFN* Jul '16]. Still on sale, it bears the initials of Bascom H King, the veteran designer (Infinity, Constellation Audio and more) who was given license by the Colorado-based company to engineer a high-output monoblock amp around his favoured tube/solid-state hybrid topology. Six years on from launch, the '300 model has been relegated to second-tier status, replaced by the PerfectWave BHK M600.

Again designed by King, and completed weeks before the engineer's passing in May 2022, this amplifier is described by PS Audio as 'a lifetime of design encapsulated in a single product', and a 'no-holds barred upgrade' of its sibling. The price tag, of £30,000 a pair, is roughy double that of the BHK 300, as is the rated 600W/8ohm output [see PM's Lab Report, p59]. Yet, thankfully, the amplifier hasn't become twice as big or twice as heavy – the BHK M600's chassis is the same width and depth as the '300, albeit somewhat taller at 285mm, and the weight has increased from 38kg to 'only' 49kg apiece.

## TO THE BRIDGE

Briefly, a word on the name. PS Audio's website lists both '300 and '600 amplifiers as 'BHK Mono' models. As the former still bears the legend 'Signature 300' on its front, this suggests a new naming strategy has been latterly introduced to better separate PS Audio's monoblock designs from the two-channel Signature 250 (£8499), another Bascom H King amp. Just to confuse matters, the back of the BHK M600 names it the 'Signature 600', but the front says 'PerfectWave'. Moving on…

Styling is low-key but certainly classy, a continuation of the rest of PS Audio's BHK series and not far removed from that of the American marque's more affordable Stellar models [*HFN* Jan & Mar '21]. Flagship status the 'M600 may have, but there's been nothing ostentatious added to emphasise it. The only outward change are two sets of carry handles to help manoeuvre it.

There's only one colourway available, with a silver/grey front panel for the aluminium chassis offset by a glossy black top plate and side-mounted heatsinks. When viewed front on, the latter are hidden from sight by curved end caps. A small standby button/logo, which pulses blue during boot-up and remains illuminated when the amp is ready (and will apparently flash when internal protection circuitry is active), is all there is to catch the eye.

> 'The album begins at full-bore pace and doesn't stop'

As with the BHK 300, PS Audio's fresh flagship amplifier features a dual mono design, its bridged N-channel MOSFET output stages juiced by a massive 1.6kVA toroidal transformer which is internally hidden beneath a forest of 'low-ESR, high-grade' capacitors [see inside pic, below].

## LION KINGS

Upgrading the power potential has also necessitated refinements to the signal path, which we're told employs 'heavy-gauge low-impedance braided cabling more befitting a Tesla than a power amplifier', in addition to gold-plated solid copper bus bars.

For the vacuum tube input stage of this hybrid model (a design Bascom H King first delivered with the Infinity Class A in 1979), PS Audio uses a pair of Genalex Gold Lion E88CC/6922 triodes. PSU rectification is also handled by a tube, rather than silicon – the BHK M600's 6CA4/EZ81 rectifier is

**RIGHT: A huge toroid (under the 0.33F bank of reservoir caps) feeds the MOSFET output stage's PSU while a smaller transformer powers the triode tube input stage. Built as a 'dual mono' amp, the sides are bridged into a single channel**

**LEFT:** The BHK M600's fascia is a substantial alloy casting with functional handles (fore and aft). The blue button controls on/standby and doubles as an output protection indicator

a 'new old stock' device manufactured in East Germany in the 1970s/'80s. Chosen by King and PS Audio for its 'superior performance', the rectifier tube is rated to last for 'thousands of hours', and the suggestion is not to bother exchanging it for another type in pursuit of sonic improvement. The Gold Lion devices, on the other hand, can be swapped if desired for 6DJ8, 7DJ8 or 7308 valves, something PS Audio encourages via instructions in the BHK M600's comprehensive manual.

This trio of valves is visible through a removable vented section of the amplifier's rear panel [see p59], which is adjacent to selectable, single-ended RCA and balanced XLR inputs. There are then two sets of bridged copper-plated binding posts, plus a toggle switch for the +26dB/+30.5dB gain options, trigger in/out, and a USB input for future firmware updates. Finally, there's a PS Link input that the company says is 'reserved for a future product'.

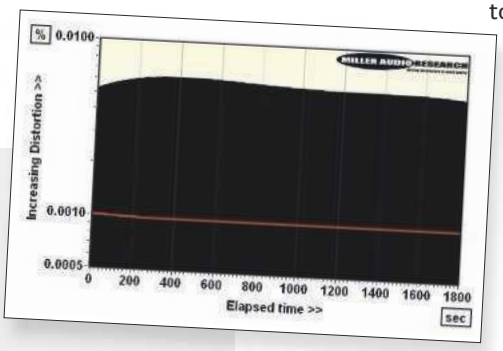
The most awkward element of setup will be siting the amps – either on stands or directly onto a hard floor – by virtue of their weight. Beyond that, operation is straightforward, meaning once I'd laced up the BHK M600s to Perlisten R7t floorstanders [*HFN* Aug '22] and PS Audio's BHK Signature Preamplifier using In-akustik cabling [*HFN* Feb '21 & Apr '22] and with sources including streaming DAC and CD, I was listening to music within minutes.

## ART 'N' CRAFT

Clearly, the BHK M600 justifies the 'muscle amp' tag, and this is an element of its performance that's impossible to ignore. However, while the power, grip and low-end reach it brought to the Perlisten loudspeakers was delicious, there's more to the amplifier than its sheer driving ability and weighty demeanour. The BHK M600 has a delivery that's smooth in the best sense of the word, an exemplary grasp of detail, and an ability to craft a soundstage of intense believability. It makes the art of music-making sound easy.

If you come to PS Audio's monoblock in pursuit of slam, weight and scale you won't be disappointed. Even at gentle listening levels, there was a depth and suppleness to the rolling basslines on Ted Nugent's sublime 'Stranglehold' [*Ted Nugent*; Epic EPC 494605 2], accompanied by wonderfully resonant drums. Raise the volume and this sense of low-end control and balance remains, only everything feels bigger, particularly during the song's instrumental section where the ethereal atmosphere fills the room. Amidst all this there's textural and tonal detail to savour, be it Nugent's drawling 'sometimes you gotta start low' vocal, the smooth highs of his gorgeous guitar tone, or the precise, sharp hi-hat playing.

This musical performance – rich yet combined with explosive power – is where the BHK M600 towers above lesser amps. The Berlin Philharmoniker's rendition of John Williams' 'Superman March' [*The Berlin Concert*; Deutsche Grammophon 486 1710] arrived with the triumphant (superheroic?) dynamics I was hoping for, but packed with so much nuance and subtlety that it began to sound like the score for a totally different film. String flurries ducked and dove beneath soaring glockenspiel and ⇨




## ARE YOU WARM YET?

**With a host of power MOSFETs, and a PSU to match, each BHK M600 boasts over 600W/8ohm on tap, and some 25A in reserve to support over 1kW into low 2ohm loads. Each mono chassis pulls 277W from the wall at idle, a portion of this soaked up by the triode tube stage but most is absorbed in the generous biasing of the bridged, quasi-complementary MOSFET power amp. These devices are mounted on two very substantial side-mounted heatsinks so, in practice, the M600 takes a few hours to reach thermal equilibrium at a toasty 50°C. Its designer, the late Bascom H King, typically took a relaxed approach to the application of corrective feedback – often good for sound but, in this case, only after a protracted warm-up.**

**When first switched on (beware, 'standby' still pulls 114W), a 'cold' M600 already shows a low 0.0055-0.006% distortion [re. 1kHz/10W/8ohm; black infill, inset Graph] but after several hours of running this reduces still further to 0.00095% [red trace] as the thermal latency of this metal mass and multiple parallel power MOSFETs is resolved. For more, see Lab Report, p59. PM**

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**Encompassing the signature front-end interface from the RS-150B and combining this with the amplifier module from the flagship RA-180, Hifi Rose have created a system that can do it all and still rival multi box solutions.**

## RS520

**Brand**: HiFi Rose / **Type:** Complete all-in-one streaming system with 250wpc amplifier (NEW)

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RS150
High Performance
Network Streamer

RS250
Complete Hi-Fi
Network Streamer

RS201 E
Professional Hi-Fi
Media Player

RSA780
Separate Low Noise
CD Drive

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**ABOVE: Each M600 carries a switchable balanced XLR/single-ended RCA input joined by parallel sets of 4mm compression-fit speaker terminals. Note the +30.5dB and +26dB gain options, 12V trigger comms [top right] and triode tube 'hatch'**

vibraphone motifs; a roomful of percussionists toiled away adjacent to an army of brass.

Voices? Handled with outrageous aplomb, whether it's the gritty, deep laments of Joe Bonamassa on his *Blues Deluxe* album [Provogue PRD 7158 2], or the soft-but-powerful delivery of London Grammar's Hannah Reid across *If You Wait* [Metal & Dust Recordings MADART1]. Throughout my listening, I was continually struck by the lifelike presence the BHK M600s gave to singers, and the sense that no detail was being air-brushed.

## BITING ENERGY

You might therefore call its sound revealing; it always seemed to find the best attribute of a piece to showcase. Yes, Exodus' 'Scar Spangled Banner' [*Tempo Of The Damned*; Nuclear Blast NB 1218-0] immediately had me hankering for more of the amp's deep reach and wide staging, but this 2004 thrash album isn't mixed to really showcase the rhythm section or wrap you in sonics. It's the twin guitar attack that fans cherish, and the BHK M600 presented all the riffs, artificial harmonics and discordant solos with a pure, metallic lustre and plenty of biting energy. It was sharp and focused, as it should be.

Returning to the two 49kg elephants in the room, and the BHK M600's prodigious power. Bearing in mind its >600W/8ohm output it should go without saying that this amp didn't once sound out of breath, no matter the task at hand. Slipknot's 'Psychosocial' [*All Hope Is Gone*; Roadrunner Records 48kHz/24-bit download] begins at full-bore pace and doesn't stop, and it sounded both huge and urgent through these monoblocks – weighty drums, thick guitar and an edge-of-the-seat presentation that served the music perfectly.

More controlled aggression was also in evidence with The Stone Roses' cheekily titled sophomore album *The Second Coming* [Geffen 424 503-2], which might be blighted by vocalist Ian Brown's slap-dash approach to singing in tune but has a thrilling 'in-the-live-room' production. The standout track 'Daybreak' benefited from the BHK M600's out-of-the-blocks slam, giving the loose-limbed rhythm section an epic scale to match the spotlight shone on John Squire's outro guitar solo.

From the same album, 'Good Times' ends in a glorious upbeat jam, drummer John 'Reni' Wren flitting between ride and crash cymbals, bassist Mani running up and down the fretboard and Squire again squealing away on his Les Paul. It was a performance of extravagant energy, detail and panache. These amps let the good times roll.

## HI-FI NEWS VERDICT

**'With great power comes great responsibility' goes the adage, yet with PS Audio's new top-flight monoblock, great power equals great fun married to gorgeous musicality. These heavyweight valve/solid-state hybrids will surely drive any speaker you might consider, and do so with total control and purity of performance. Installing them might require some labour, but their music-making is effortless.**

Sound Quality: 87%

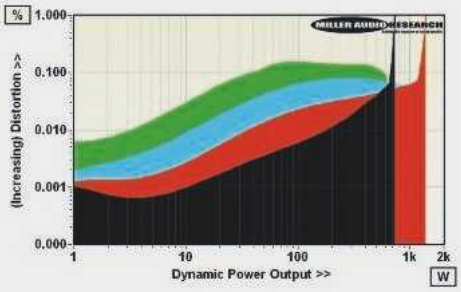
0 - - - - - - - - - 100

# LAB REPORT

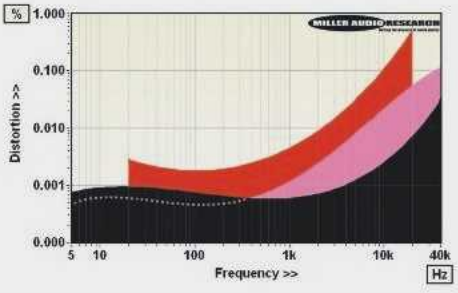
## PS AUDIO PERFECTWAVE BHK M600

BHK's swansong is not simply a 'doubled-up' Signature 300 monoblock [*HFN* Jul '16] for although the latter is (still) rated at 300W/8ohm and 600W/4ohm, and the M600 specified at 600W/8ohm and 1kW/4ohm, the new M600 is more cautiously protected into lower impedance loads. So, while the '300 offers 420W, 790W and 1410W into 8, 4 and 2ohm and a full 2120W into 1ohm under dynamic conditions, the M600 delivers 745W and 1390W into 8 and 4ohm but drops back slightly to 1120W and 625W into 2 and 1ohm loads, respectively [see Graph 1]. Incidentally, there's no difference in power output or the wide 91.3dB A-wtd S/N ratio (re. 0dBW) in either the preferred +26dB or (high) +30.5dB gain settings available via the M600's rear panel. Indeed, given the size of the 1.6kVA internal transformer the M600's low noise (half that of the '300) is *very* impressive.

As with the Signature 300, the M600's distortion initially creeps up gently with power output from 0.0003%/1W to 0.00095%/10W before holding at 0.006% from 100-300W and increasing more abruptly to 0.016%/400W and 0.16% at the rated 600W/8ohm (all re. 1kHz). Distortion also increases more aggressively at high frequencies from 0.00095% at 1kHz/10W to 0.055%/20kHz and 0.12%/40kHz [see Graph 2, below]. Otherwise, PS Audio has retained an impressively uniform 0.07-0.09ohm output impedance which only begins to increase above 80kHz, reaching 1.3ohm/100kHz. This assists its extended frequency response which is flat to within ±0.5dB from 1Hz-60kHz, falling slightly thereafter to –1.4dB/100kHz. Into lower impedances this amounts to –1.9dB/100kHz/4ohm, –3.3dB/100kHz/2ohm and –4.9dB/100kHz/1ohm. **PM**




**ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 25.0A**




**ABOVE: Distortion vs. extended frequency (5Hz-40kHz; 1W/8ohm, black; 10W, pink & 5Hz-20kHz; 100W, red)**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Power output** (<1% THD, 8/4ohm) | 685W / 1150W |
| **Dynamic power** (<1% THD, 8/4/2/1ohm) | 745W / 1390W / 1120W / 625W |
| **Output imp.** (20Hz–20kHz/100kHz) | 0.065-0.085ohm / 1.3ohm |
| **Freq. response** (20Hz–20kHz/100kHz) | –0.0dB to –0.075dB/–1.35dB |
| **Input sensitivity** (for 0dBW/600W) | 141mV / 3415mV (balanced) |
| **A-wtd S/N ratio** (0dBW/600W) | 91.3dB / 119.1dB |
| **Distortion** (20Hz-20kHz, 10W/8ohm) | 0.00045-0.055% |
| **Power consumption** (Idle/rated o/p) | 277W / 955W (114W standby) |
| **Dimensions** (WHD) / **Weight** | 434x285x356mm / 49kg (each) |

Streaming DAC/CD player/amplifier. Rated at 140W/8ohm
Made by: AVM Audio Video Manufaktur GmbH, Germany
Supplied by: The Professional Monitor Company Ltd
Telephone: 01767 686300
Web: www.avm-audio.com; www.pmc-speakers.com
Price: £15,950



# AVM Ovation CS 8.3 Black Ed.

AVM's flagship all-in-one network/CD music system combines cool-running power with huge flexibility while the top 'Black Edition' features a custom finish and selected tubes

Review: **Jamie Biesemans** Lab: **Paul Miller**

Nowadays there's a wealth of all-in-one units available but AVM was one of the brands to spot the trend early on. That partly explains why, even in an industry that loves extensive model ranges, the company has an impressively large product offering – including five streaming receiver solutions. And there's little concession to price in this range, so the top-of-the-line £14,950 Ovation CS 8.3 model boasts ample power reserves, a full range of streaming capabilities and a slot-loading CD player.

It's the successor to the CS 8.2 [*HFN* May '17] and still employs Class D amplification from Pascal [see PM's boxout, p61] – a well-known supplier to pro audio brands, and recently featured in Dynaudio's active Focus loudspeaker – next to an ESS-based DAC. The Pascal module is driven by a triode tube line/preamp stage in the CS 8.3, unlike the £12,950 Ovation CS 6.3, for example, which is solid-state throughout.

Shipped in its own bespoke flight case, the £15,950 Black Edition we have here takes the standard CS 8.3 model and gives it a discrete makeover with an exclusive finish and selected tubes. And no, although 'Black Edition' makes it sound like a limited offering, this flagship is here to stay.

## PAINT IT BLACK

AVM's hardware has always featured superb build quality and the German brand has recently upped its game further by moving production closer to its home base in Malsch, just south of Karlsruhe and west from Stuttgart. And it shows, as the quality of the CS 8.3 Black Edition's casework is exemplary. From the chamfers softening the corners on the aluminium chassis to the way everything fits seamlessly together, there's not a screw in sight.

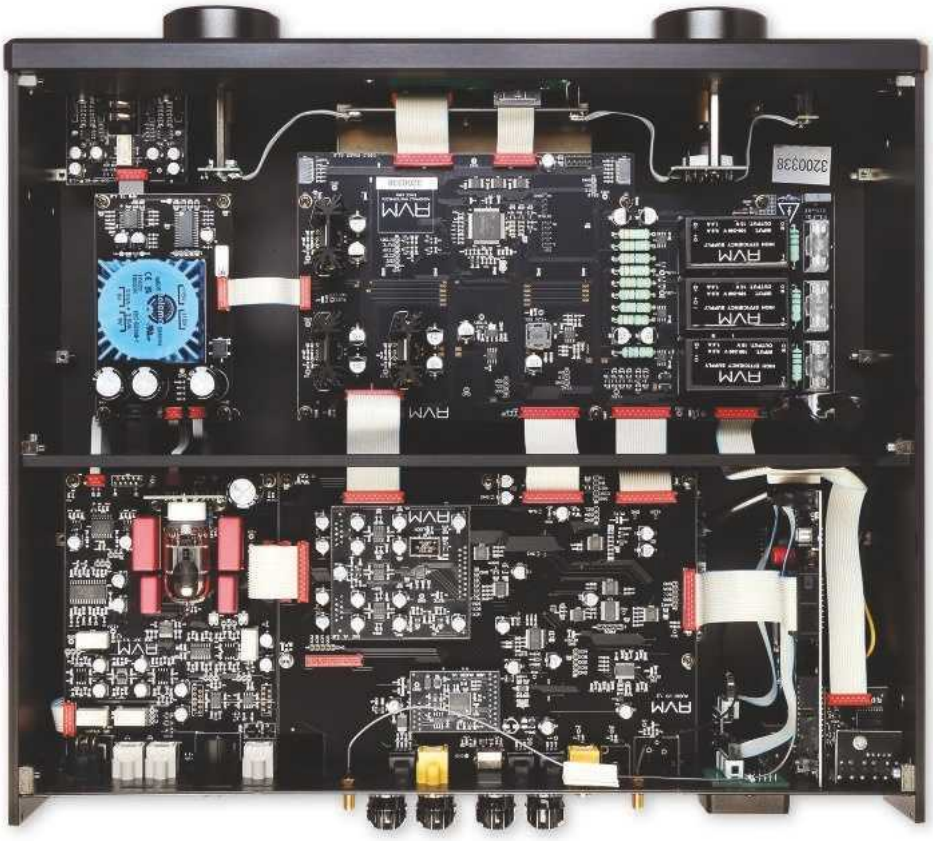
This Black Edition does not have the regular black finish of the CS 8.3, but a classy hand-brushed matt anodising that oozes understated luxury. It's very much the antithesis of AVM's highly reflective Cellini Chrome finish, available on other models. To emphasise the desirability of the new unit, 'Black Edition' has been scrawled on top in a subtly applied signature, only noticeable when the light falls just in the right way. As with other AVM products, there's also a large angular AVM logo cut into the lid.

## LOW-KEY LOOKS

Source and volume controls are dressed in the same matt black finish, so there's very little grabbing your attention. The central display showcases low-key blue characters; you'll see streaming metadata appear here, and you can control the CD player or quickly peruse the settings via a row of five buttons, with their context-related functions appearing on the screen above. There's not actually a huge number of options you can play around with, but two digital filters [see PM's Lab Report, p63] and tone controls are there to add seasoning to the sound.

Even though the Ovation CS 8.3 Black Edition is positioned as a flexible, super-integrated amplifier, it possesses wide-ranging connectivity. Sure, there are streaming options galore and that slot-loading CD player on board (no Super Audio CD here), but you can also connect external sources via the multiple digital inputs (coax, optical and USB-B) and a double set of analogue ins.

A balanced XLR input is included for connection with a high-end source or AV processor, and you can slide the Black Edition into a larger system via balanced and unbalanced line outputs. Therefore,



**RIGHT: Wireless network PCB [lower right] joins XMOS USB and ESS-based DAC board [middle], and analogue i/o board with dual-triode [lower left]. Slot-loading TEAC CD drive [top] and Class D amp with switchmode PSU [bottom] lie beneath**

it's even possible to add extra horsepower in the shape of – say – AVM's monstrous Ovation SA 8.2 stereo amplifier [*HFN* Mar '18]. It's good to see the CS 8.3 is not an entirely 'closed box'.

## FUTURE-PROOFING

On the subject of upgrading, the maker says the player's DAC stage (and XMOS input board) are replaceable, paving the way for hardware changes in the future. That said, the fitted converter – an ES9018K2M – can handle pretty much all the hi-res material out there.

Next to the CS 8.3's integrated TEAC CD drive, which is a cut above PC hardware derivatives, there are enough streaming options to likely satisfy everyone. AirPlay, DLNA, Roon, Spotify Connect – with Bluetooth as a fallback option – cover a lot of bases, but there's also AVM's X-Stream Engine, controlled by its own app. This is a user-friendly affair, offering Qobuz and Tidal, Internet radio, podcasts and playback of the majority of file formats from USB or over the network. Furthermore, the app offers total control over inputs and the CD player – a good thing, as the remote handset [p63] remains an optional purchase.

## AUTHORITY AND CLARITY

The Ovation CS 8.3 Black Edition is billed as a no-compromise all-in-one product, and that's certainly the immediate impression it made when hooked up to a pair of Sonus faber Serafino Tradition floorstanders [*HFN* Feb '18]. It played with authority and clarity, and with generous amounts of power on tap. The tube stage undoubtedly added an organic undertone to the precision of the Pascal modules, but it was a feather-light touch.

'An effortless mix of detail and power with vocals'

I haven't heard enough of Benjamin Clementine's brand-new album release *And I Have Been* to use it as audition material, but his debut collection *At Least For Now* [Barclay 4714492] from 2020 remains an enthralling benchmark. From the very beginning, portraying the impressive strength of this singer/songwriter's voice turned out to be no challenge at all for the CS 8.3 Black Edition. Clementine is a remarkable male vocalist, with the ability to hit high notes and maintain them, and listening to such highpoints in songs like 'London' or 'Winston Churchill's Boy', presented full-bodied and naturally by the AVM amplifier, revealed his outrageous talent even more.

He is also able to nimbly shift tack and inject notes of pathos and anger into his vocal performance, such as in the rapid-paced, piano-laden 'Adios'. The Ovation CS 8.3 Black Edition handled these sudden dynamic changes in volume very well, also presenting the added texture in his voice without sign of strain. It's all very effortless, and this mix of detail and power with vocals is a standout aspect of its performance.

There's also no faulting how the CS 8.3 Black Edition uncovered the dynamic differences between the fleet-footed piano of Leif Ove Andsnes and the full orchestra during Mozart's beautiful Piano Concerto N°20 on *MM 1785* [Sony Classical 19439742462; 96kHz/24-bit]. The grand concert hall, the image of Andsnes' confident playing – it was all there, drawing me into the recording. Admittedly, the Sonus faber speakers are well suited to music like this to start with, but the AVM amplifier driving them brought additional refinement to the table.

**ABOVE: Seen in black livery, the CS 8.3's bold rotaries govern input selection and volume, with buttons to navigate the menu (or via the RC X app). TEAC-sourced slot drive is for CDs only**

## PASCAL POWER

**AVM has had a technology tie-in with Denmark's Pascal A/S for a number of years, selecting the U-PRO 2S Class D amplifier module for its Inspiration CS 2.3 [*HFN* Dec '21] while retaining the beefier S-PRO2 from the earlier Ovation CS 8.2 [*HFN* May '17] for this latest Ovation CS 8.3 Black Edition. The S-PRO2 module [pictured above with S-A2 extension board] is rated at 2x500W/4ohm (at 89% efficiency) and comes with Pascal's UREC universal switchmode PSU with Power Factor Correction (PFC) and standby converter. In theory, these modules are bridgeable for a claimed 1kW/4ohm output but AVM runs a single S-PRO2 in stereo guise within the CS 8.3. More importantly, while we saw the U-PRO 2S module's response influenced by speaker load impedance in the CS 2.3, the improved Class D architecture of the S-PRO2 – presumably with inductive output filtering *inside* the feedback loop – ensures the CS 8.3's response is less affected by swings in speaker impedance. In practice its –2.6dB/20kHz/8ohm roll-off holds to –2.8dB and –3.3dB into 4 and 2ohm loads. PM**

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**ABOVE: Coaxial, optical (x2) and USB-B digital inputs are joined by wired and wireless LAN, USB-A (HDD), FM radio and RCA/XLR line inputs. Coaxial and optical digital outs join fixed and variable RCA/XLR line outs in addition to 4mm WBT speaker terminals**

I got the same sense of organic but insightful playing using AVM's RC X app and Qobuz, which exposed the fascinating sounds of the cymbalom on tracks such as 'Mr. Moustafa' from the soundtrack of *The Grand Budapest Hotel* [ABKCO 1877181302]. Not surprisingly, if you know the visual style of Wes Anderson's films, this companion soundtrack is rich in orchestration and inventiveness. It's the kind of music you keep listening to, always discovering new details. The Ovation CS 8.3 Black Edition presented it all with style, but not in a way that tried to highlight – and perhaps over-expose – every little nuance.

## RELENTLESS RHYTHMS

AVM's flagship streamer left me with no doubts about the sheer control it can impose over proceedings, noticeably during Moderat's 'Eating Hooks' [*III*; Monkeytown Records MTR064CDJP]. Here, the wall of synthetic sound that grows in scale while supporting Sascha Ring's voice near the song's finale was awe-inspiring – in a good way – but it was the relentless, rhythmic backing to the track 'Running' which really cemented the ability of this fine, do-it-all system.

During 'Hungry Ghost' on Brad Mehldau and Mark Guiliana's *Mehliana: Taming the Dragon* [Nonesuch 7559-79579-5; 96kHz/24-bit], there was again that organic touch, helping to embellish the thick, warm portrayal of the organs and the synthesiser. The intricate drumming of Mark Guiliana plays a supporting role in this track, and in the first instance all my attention went to the analogue sounding organ. Yet equally it was possible to focus in on Guiliana's stick work, with a light touch of the snare drum here, and the rapid bass drum sequence there.

**LEFT: The Ovation CS 8.3 Black Edition is best navigated using the RC X App for iOS and Android, but AVM also offers an optional IR remote control that governs volume, input, radio station, CD track selection, stop and play**

## SWEET TREAT

While it's pleasingly simple to play music through the RC X app or the Ovation CS 8.3 Black Edition's other network options, the internal disc player is very capable too and impresses even more than the streaming inputs. So CD revivalists, take note! Tsuyoshi Yamamoto Trio's *Midnight Sugar* [Three Blind Mice TBM-23], one of those audiophile favourite discs hailing from Japan, was presented exactly as it should be, with the resonance of the double bass body, the attack of the piano and the oomph of the bass drum making for a convincing, lifelike listen. It's detailed but so very nicely integrated at the same time, making for a joyous immersion in music.

## HI-FI NEWS VERDICT

**AVM's CS 8.3 Black demonstrates that an 'all-in-one' truly can do it all, while performing at a level that's commensurate with many high-end separates. There's a price to be paid for this level of accomplishment, that's true, but the combination of powerful Class D amplification, excellent streaming playback, a superb CD player and future-proof features ensures this unit is a tough act to follow, and to beat.**

Sound Quality: 85%

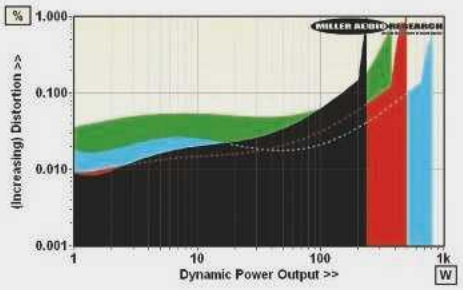
0 - - - - - - - - - 100

# LAB REPORT

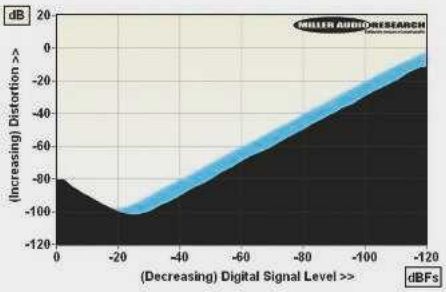
## AVM OVATION CS 8.3 BLACK

As we saw in the Ovation CS 8.2 [*HFN* May '17], which employed an earlier generation of Pascal's S-PRO2 Class D amp module [see boxout, p61], AVM's 500W/4ohm rating amounts to 2x245W/8ohm and 2x480W/4ohm in practice, with 240W, 510W and 830W achievable under dynamic conditions into 8, 4 and 2ohm loads [see Graph 1, below]. The modules are current-protected and so output into low (1ohm) loads is 'limited' to 380W (20.4A at <1% THD). The A-wtd S/N is a little below average at 78.4dB (re. 0dBW) but the response, which rolls gently away from –1dB/12kHz to –2.6dB/20kHz, takes the edge off any glare. The pattern of distortion, low at 0.007-0.009% through bass and midrange, increases more rapidly at HF to 0.03%/10kHz and 0.06%/20kHz (all re. 0dBW). Versus level, THD increases gently from 0.007%/1W to 0.02%/10W, 0.05%/100W and 0.1%/200W.

While these qualities are primarily linked to the Class D amp, the CS 8.3's preamp also picks up some slight 'colour' from the triode tube stage [see Graph 2] so that THD *falls* from 0.014-0.0013% over the top 30dB of the ES9018 DAC's dynamic range (the ES9038 claimed in AVM's literature is incorrect). However, with gain set to '+4' for a 2.03V preamp output, the 106.1dB A-wtd S/N ratio remains very respectable. The 'Steep' and 'Smooth' digital filters are both linear phase types, the former trading more extensive ringing for a full 83dB stopband rejection and flatter –1.3dB/20kHz, –5.5dB/45kHz and –13.6dB/90kHz response with 48kHz, 96kHz and 192kHz media. The 'Smooth' filter offers just 6dB of stopband rejection and a 'sweeter' –4.3dB/20kHz response, but ringing/time domain distortions are much reduced. It is recommended for 96kHz+ sample rates. **PM**




**ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads. Max. current is 20.4A**




**ABOVE: Distortion versus 24-bit digital signal level over a 120dB range (1kHz, black; 20kHz, blue)**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Power output** (<1% THD, 8/4ohm) | 245W / 480W |
| **Dynamic power** (<1% THD, 8/4/2/1ohm) | 240W / 510W / 830W / 380W |
| **Output imp.** (20Hz–20kHz, Pre/Amp) | 45ohm / 0.02-0.175ohm |
| **Freq. resp.** (20Hz–20kHz/100kHz) | –0.07 to –2.6dB/–26.5dB |
| **Digital jitter** (CD / S/PDIF) | 255psec / 250psec |
| **A-wtd S/N ratio** (DAC/Amp) | 106.1dB (0dBFs) / 78.4dB (0dBW) |
| **Distortion** (DAC, 0dBFs/Amp, 10W) | 0.013-0.017% / 0.017-0.085% |
| **Power consumption** (Idle/Rated o/p) | 34W / 1.09kW (4W standby) |
| **Dimensions** (WHD) / **Weight** | 430x130x380mm / 12kg |

Two-way standmount loudspeaker
Made by: YG Acoustics LLC, Colorado, USA
Supplied by: Padood Ltd, Cambridge, UK
Telephone: 01223 653199
Web: www.yg-acoustics.com; www.padood.com
Prices: £9900 (£11,500 inc. stands)



# YG Acoustics Cairn

The smallest of the five-strong standmount/floorstanding Peaks series from YG Acoustics promises to move mountains
Review: **Andrew Everard** Lab: **Paul Miller**

Depending on your age, there's the potential for confusion in the naming of YG Acoustics' latest loudspeakers. The Peaks series is inspired by the Rocky Mountains looming over YG's base a few miles outside Denver, and most of our readers will be from generations with 'life experience', and upon hearing the title 'peak' will likely associate it with products of aspirational quality. In the argot of London teenagers, however, 'peak' is now taken to indicate unexpected bad luck. In truth, the recent collaboration between Cambridge Acoustic Sciences and YG's mid-US manufacturing base has been nothing but fortuitous [see boxout, p65].

## HEAD FOR HEIGHTS

Launched at the beginning of 2022, the Peaks lineup starts with the Cairn we have here, at £9900 in a choice of three finishes, or £11,500 with the dedicated, machined alloy stands. The remainder of the six-strong range encompasses a larger standmount (the £13,000 Tor) and then three floorstanders, peaking – sorry! – with the £30,000 Summit, which stands 113.5cm tall and tips the scales at 72kg. The lineup is completed by an active subwoofer, the £9400 Peaks Descent, packing a 1000W amplifier and 280mm driver, and claiming a (subsonic) bass extension down to 18Hz.

The Peaks series marks something of a departure from YG's older models with their curvaceous, sculptural shapes. As is apparent from the Peaks Cairn, the new arrivals have a more square-cut design, in the form of slanted panels – albeit with gentler curves – constructed from 25mm resin fibre in the presses of a European partner, and finished with wood veneers and deep lacquer. Overlay options are Balanced Oak, Flamed Rosewood and Datuk Ebony, the latter pictured here being supremely well finished, as you would rightly expect at the price.

All the vertical panels of the sealed cabinet have this subtle slant, giving the enclosure something of the look of a truncated pyramid, while the drivers are mounted in an aluminium baffle machined in-house from 3.8cm-thick slabs. A dished horn-loaded waveguide surrounds the tweeter, the design of the baffle, and its machining, being the result of extensive computer modelling.

## IN-HOUSE FOCUS

The Cairn cabinet uses selective bracing and acoustic absorption for resonance control, a technique the company calls 'FocusedElimination', again informed by modelling to eliminate the need for lossy internal damping. Meanwhile a lower 'plinth' section of the enclosure – yes, even in these standmounts – again milled from aluminium, houses and isolates the crossover and holds the single set of speaker terminals. Incidentally, these are Nextgen types from WBT, an audiophile favourite but not always suitable for 'heavy' speaker cables or cranking spanner-tight. To the base of this are attached the machined feet that either support the speakers directly on shelves, or sit snugly in matching dished cutouts atop the optional stands.

> 'There's weight and scale here far beyond their size'

As a rule, there's a marked lack of off-the-shelf technology found in the Cairn. Instead, just about everything here is made by YG, either in-house in Colorado or at selected partner companies. And that includes the drive units, which use what it calls its ForgeCore and BilletCore technologies. The former, which involves the CNC machining of steel components, is used in the motor system of the drivers, where it allows more complex 3D geometries than are possible with laser-cutting or stamping, all in the quest for reduced distortion.

BilletCore, meanwhile, is used in both the vestigial 30mg 'airframe' supporting

**RIGHT: Seen here on its dedicated, all-alloy stand, the Cairn combines a ForgeCore tweeter, mounted into a short horn waveguide, with a 150mm BilletCore bass/mid driver. The baffle is also CNC-machined from a solid piece of alloy**

and stiffening the soft tweeter dome from behind, and in the 150mm bass/mid cone. Here each shape is machined from billet aluminium, again using CNC-controlled tools, with 99% of the material removed (and then recycled) to produce a lightweight component retaining the alloy's original structure and strength. Crossovers are also handbuilt on circuitboards made in-house, and use selected components including the company's own toroidal/air-cored (ToroAir) inductors for reduced distortion.

While the Peaks Cairn speakers aren't exactly hefty, weighing 12.7kg apiece, they feel solid and substantial, and the build and finish are impeccable. The slender stands are just as impressive. Again they're machined and anodised in-house to the same exacting standards as the metalwork elsewhere in the speakers, with ribbing inside the twin uprights to increase stiffness without adding weight. The stands are both inert – there's no hollow tube here – and more than sturdy enough for the job at hand while remaining simple to handle and install. However, some means of hiding away the loudspeaker cables wouldn't go amiss!

High-quality spikes are provided, drilled through and with an Allen key supplied to use as a miniature tommy-bar to tighten them in place. Note that the shortness of the spikes and a lack of locking nuts might make it slightly tricky to adjust them if you have very uneven floors. Spike-cups are also provided to protect precious flooring, and once the speakers' feet are nestled into the recesses on the stands' cutaway top plates – there's no additional connection between the two – the whole assembly feels solid, stable and 'of a piece'.

## BIG AND BOLD

Coming to these YG Acoustics speakers shortly after finishing auditioning the massive DALI KORE floorstanders [see p40] was something of a culture shock – the Cairns are small by standmount speaker standards, but positively minute compared to the larger-than-life DALI models. But any expectations that they'd also sound rather small and weedy were immediately dismissed…

Listening on the end of my longstanding Naim pre/power system, and despite the relatively modest output of my very familiar NAP250 amplifier, these little speakers immediately proved themselves capable of a developing a big, bold and wonderfully coherent sound.

## NEW GENERATION

**The period following the departure of founder and Chief Engineer, Yoav Geva, has seen the new ownership of YG Acoustics – the Colorado-based high-end loudspeaker brand – focus on developing its most accessible range to date. In fact the new Peaks series would never have been possible without the combination of financial investment from the US and 'technological' investment – including a host of proprietary simulation resources – from UK-based Cambridge Acoustic Sciences. The latter was co-founded by Cambridge astrophysicist Matthew Webster, who is now CEO of YG Acoustics and works alongside longstanding YG employees Nathan Cramer (Operations manager) and Jason Browning (Product design lead) who remain at the Denver plant.**

**Every facet of the Peaks loudspeakers, from driver and crossover design to cabinet construction and materials optimisation – down to the glue and veneer quality – was trialled in software before physical 'proof of concept' samples saw the light of day. The correlation between this holistic modelling and the 'real life' loudspeakers was very reassuring, according to Matthew, with the impact of very small changes in cabinet bracing, for example, being accurately predicted.**

**Following a further $2m investment, the production facility has doubled in size and all-new three-axis CNC machines installed to beef-up the brand's manufacturing capacity. The extra resource has allowed YG Acoustics to embark on a three-year roadmap with the Peaks series as its first offering. We can expect another range to 'fly in' above the Peaks at some point in the future… PM**

The company claims a relatively deep 40Hz bass extension for the Cairns, and a fairly easy-going combination of 86dB sensitivity [although see PM's Lab Report, p67] and 8ohm 'average' impedance. The result is that they presented no problems whatsoever for the NAP250's 2x80W output. True, they won't fill a huge room with ear-splitting sound, but these are truly exceptional small/medium room speakers that, by the standards of some of the high-end compact competition, are not unreasonably priced.

## HOLLY GOOD SHOW

Playing the various instrumental test-tracks on *The Audiophile's Guide: The Loudspeaker*, from fellow Coloradans PS Audio's Octave label [OCT0021; DSD/DXD], demonstrated both the tonal purity of the Cairns, and their ability to create a superbly realised soundstage. This was also borne out by 'If We Make It Through December' from Holly Cole's gorgeously remastered *Baby It's Cold Outside And I've Got The Christmas Blues* [Alert Music download]. There was a luminous view of Cole's voice, the darling of many a hi-fi demonstration, and ⇨

**LEFT: The Cairn's sealed, internally braced and damped cabinet is fashioned from curved 25mm-thick resin-fibre. Three wood veneer options are offered – Balanced Oak, Flamed Rosewood and Datuk Ebony (pic'd)**

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**LEFT: A single set of WBT Nextgen terminals are mounted into the base of the Cairn. Note adjustable 'thumbwheel' feet that locate into recesses on the stand's top-plate**

instruments both crisply rendered and persuasively placed.

And they're just as captivating with the lush, heavily orchestrated new Arctic Monkeys set *The Car* [Domino WIGCD455]. The Cairns' ability to deliver weight and scale beyond their size, allied to a clean, focused presentation, was very much in evidence from Alex Turner's falsetto vocals to the flexibility of the drumming of Matt Helders.

## DEEP DIVE

The ominous distorted bass underpinning the 'Sculptures Of Anything Goes' didn't faze these diminutive cabinets, and neither did the dense electronic soundscapes of Max Cooper's *Unspoken Words* album [Mesh MESH077], where the clarity and fine driver-integration of the Cairns allows the listener to take a good deep dive into the multiple layers of sound. That's an ability also deployed to good effect with the Britten Sinfonia/Thomas Adés reading of Beethoven's symphonies on Signum Classics [SIGCD687, 96kHz/24-bit], from the measured *allegretto* of Symphony N°7 to the powerful final movement of the 9th.

YG's Cairns delivered the dynamics of this music with a freeness unusual in speakers of this size, with no sign of thickening up on the peaks – so to speak! I was left with the overwhelming impression of listening to loudspeakers endowed with rather more driver acreage, so well was the weight and scale handled.

Sticking with the Britten theme, a mix of warmth, clarity and air served well the composer's 'Variations On A Theme Of Frank Bridge', played by Ensemble Allegria [LAWO LWC1241; DXD] – think excellent drama and string timbres delivered with real vivacity.

## PEAKY BLINDERS

Frankly, the way these little speakers, aided by the slightest of toe-ins, rendered the musicians before me in a soundstage as focused as it was well-scaled speaks volumes for all that computer modelling, not to mention the extensive listening, involved in their development. Yet for my part, that was all but forgotten as I listened to the Cairns sliding through the all-too-brief 'Romance' variation, before captivating with the 'Fugue and Finale' with which the piece ends. Small speakers have rarely offered such a big-hearted sound.

## HI-FI NEWS VERDICT

**In every way small but beautifully formed, the Cairns show all the benefits of their manufacturer's integration of extensive analysis and modelling in the design and manufacturing processes. They're precise without ever being clinical or sterile, and have a weight, depth and finesse that belies their compact dimensions. Few small standmounts will fill modestly proportioned rooms with such authority. They are little crackers!**

Sound Quality: 88%

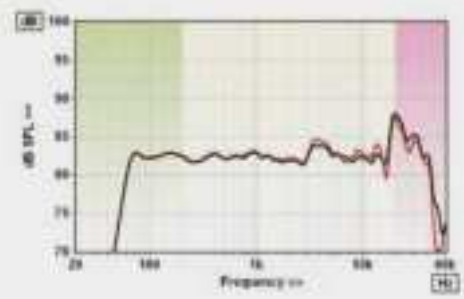
0 - - - - - - - - 100

# LAB REPORT

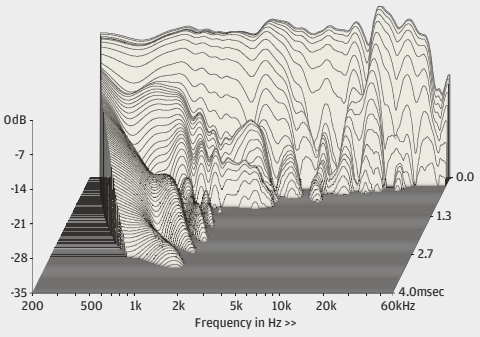
## YG ACOUSTICS CAIRN

The combination of the Cairn's small, sealed box alignment, 150mm 'BilletCore' bass/mid driver and relatively easy load all suggest low sensitivity. YG specifies 86dB, but 83.0dB/1kHz is closer to the mark, or 82.5dB (500kHz-8kHz) with the 2kHz lift as the treble dome takes over [Graph 1] taken into account. Its impedance phase shows +30/–63° swings across an uneventful resistive load that drops to 3.7ohm/192Hz but presents a mildly taxing EPDR of 1.5ohm/53Hz. In practice, amplifier pairing is of greater 'interest' at lower frequencies still where the Cairn's impedance rises from 4.1ohm/62Hz to 16ohm/20Hz and 35ohm/5Hz – potentially 'boosting' the low bass from those (tube) amps with a high source impedance. The achievable low frequency extension is also limited by enclosure/driver size, *etc*, the 'BilletCore' unit offering a 55Hz-1.4kHz (–6dB) bandwidth before crossing over to the tweeter at 1.9kHz. The Cairn's bass peaks at 74Hz prior to a combined electrical/acoustical 4th-order roll-off that delivers an extension of 54Hz (–6dB re. 200Hz).

Otherwise the forward response is flat to within ±1.8dB and ±2.0dB limits, and pair matching is a fine 0.8dB (all 200Hz-15kHz), even though this widens to ±3.9dB/±4.0dB and 2.3dB, respectively, thanks to an early treble dome resonance at 19.8kHz. Beyond this the HF response extends to 48.3kHz and 45.1kHz (–6dB re. 10kHz), respectively. There's a cap on the Cairn's power handling, and a limit to the size of room it will fill, but even at our reference 90dB/1m SPL, midrange distortion still held to a very impressive sub-1%. In-band cabinet/driver resonances are also held at bay [see Graph 2, below]. **PM**



**ABOVE: Response including nearfield 'BilletCore' bass/mid driver [green], freefield corrected to 1m at 2.83V [yellow], ultrasonic [pink]. Left, black; right, red**




**ABOVE: Aside from a minor mode within the BilletCore driver, the Cairn is free of 'colourful' resonances**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Sensitivity** (SPL/1m/2.83V – 1kHz/Mean/IEC) | 83.0dB / 82.5dB / 80.2dB |
| **Impedance modulus: minimum & maximum** (20Hz–20kHz) | 3.7ohm @ 192Hz<br>15.9ohm @ 20Hz |
| **Impedance phase: minimum & maximum** (20Hz–20kHz) | –62.5° @ 30Hz<br>+30.3° @ 570Hz |
| **Pair matching/Resp. error** (200Hz–20kHz) | 2.3dB/ ±3.9dB/±4.0dB |
| **LF/HF extension** (–6dB ref 200Hz/10kHz) | 54Hz / 48.3kHz/45.1kHz |
| **THD 100Hz/1kHz/10kHz** (for 90dB SPL/1m) | 0.7% / 0.06% / 1.5% |
| **Dimensions** (HWD) / **Weight** (each) | 370x192x262mm / 13kg |

Photo-electric pick-up cartridge and equaliser
Made by: Digital Stream Corporation, Kanagawa, Japan
Supplied by: Soundfowndations Ltd, Berks
Telephone: 0118 9814238
Web: www.ds-audio-w.biz; www.soundfowndations.co.uk
Price (inc. equaliser): £12,995



# DS Audio DS-W3

Updating the DS-W2 with a host of trickle-down technology from the brand's flagship 'dual mono' Grand Master, the new DS-W3 'optical' pick-up looks to steal the limelight

Review: **Ken Kessler** Lab: **Paul Miller**

An object lesson in how to create a monopoly: make something no-one else can copy. As tricky to manufacture as CD players, electric cars, digital cameras and quartz watches might have been at the outset, competitors soon emerged for each. Not so DS Audio's 'optical' cartridges, which have captivated the high-end since arriving in 2015. Imitators have yet to emerge.

At £4995 for the new DS-W3 cartridge, £9495 for the matching energiser/equaliser, or £12,995 if purchased together for a £1495 saving, it's not like the rewards aren't there to inspire other manufacturers. The package, it must be remembered, also obviates the need for a phono stage as DS cartridges do not work with RIAA circuitry [see PM's boxout, p69].

## A HEAD START

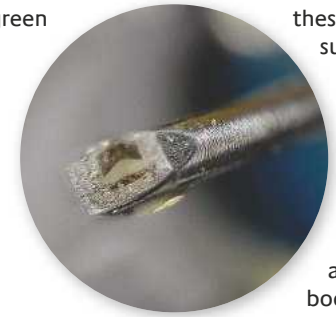
As for the dearth of opposition, cynics would argue that rewards are limited because the high-end pick-up market isn't that large. But R&D costs would be high, and DS Audio has the very real advantage of being in the wing of a company with long experience in related optical devices.

The Japanese company has been prolific – I think this is its 11th or 12th new cartridge – but while each model has sounded slightly different they have all borne an evolving family resemblance. The third generation was launched in 2020 with the flagship Grand Master [*HFN* Feb '21], and the technology has trickled down to the 'W' model, to create the DS-W3 tested here, as a replacement for the DS-W2 [*HFN* Jan '19]. Visually, this new cartridge looks like its siblings until you switch on the energiser. An LED strip glows a fiery red, in place of the less bold colours – such as lavender, green or blue – we've seen before. This hue, not dissimilar to that of a Ferrari, promises performance, and it's matched by the red tell-tale on DS Audio's matching energiser.

## SPLIT MECHANISM

Inside, the optical system benefits from 'Gen 3' gains including independent LEDs and photo-detectors for the L/R channels, resulting in increased output voltage (from the cartridge, not the equaliser), which is now 70mV versus the earlier models' 40mV. The manufacturer also attributes improved left and right channel separation and S/N ratio to the split optical mechanism.

Keeping with the look of extant models, the DS-W3's body is still unusually shallow. DS Audio produces lightweight plates to insert between the cartridge and headshell if arm height becomes an issue, particularly with some tonearms – SME specifically – that widen towards the rear, at the LP's edge. As the DS-W3 weighs only 7.9g, use of these plates should not add substantially to the mass.



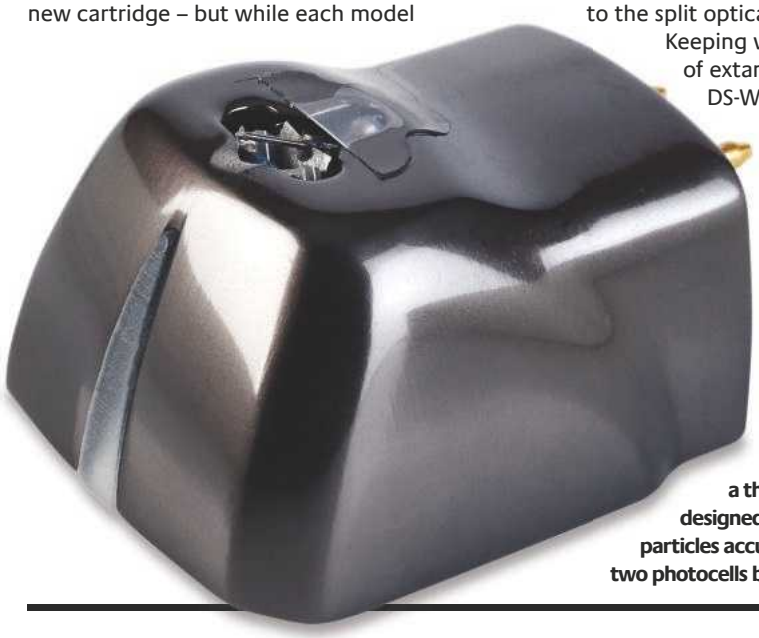
**INSET: Although the DS-W3 benefits from much of the Grand Master's updates, the pick-up still uses a boron cantilever. The clean line-contact stylus, seen here at x30, is cemented into a hole at the tip of the boron rod**

Also part of the third generation improvements is a thinner, lighter shading plate, reduced from 1.56mg to 0.74mg by using 99.9% pure beryllium in place of the previous aluminium. The cartridge body is aluminium, and the wiring 1.6 times thicker than that of the previous generation, lowering its internal impedance. The cantilever is boron, the stylus a line contact type [see inset pic, above] and the DS-W3 tracks at 1.9g, 0.2g higher than typical of the Gen 2 models, if I remember correctly.

## QUICK CHANGE

For once in my on-going relationship with DS Audio cartridges, I auditioned the energiser before the cartridge, rather than cartridge first or both at the same time. This was a simple substitution that took all of two minutes as I keep a DS Audio cartridge in operation at all times on one of my record decks; the model in question being the DS-003 [*HFN* Oct '21], an earlier Gen 3 design costing a modest £4995 *with* energiser, or the same as the DS-W3 cartridge on its own.

Wow! The new energiser utterly transformed the performance to another level, especially for bass solidity, an even quieter background (quite an achievement as the DS Audio cartridges have always been ghostly in that area), and greater 'speed'. Also indicative of the energiser improvements, *eg*, greater reservoir



**LEFT: The boron cantilever and lightweight beryllium 'shading plate' are visible here in front of a thin-film screen designed to limit dust particles accumulating on the two photocells beneath**

**RIGHT: The DS-W3's alloy body and top plate ensures it can be bolted tight to the headshell. The decorative LED strip is a very useful cueing aid but is separate from the internal LEDs that form the photo-electric mechanism**

capacitance, is that it takes longer for the charge to dissipate, the lights staying on far longer than with previous models.

All of this suggests – and I hope retailers won't hate me for saying this – that while each DS Audio cartridge has a matching PSU/equaliser which is its natural partner, the upgrade path isn't necessarily buy-the-next-model-up-cartridge. Instead, some might opt for a less expensive cartridge with a dearer energiser/equaliser, or vice versa, because occasionally the better energiser may be a wiser solution, especially for perennial upgraders.

To understand this, I contacted Tetsuaki Aoyagi, DS Audio president, who told me: 'The basic configuration of the DS-W3 equaliser has not changed, but we have optimised the components to match the third-generation cartridge'. What this simply confirmed was that the DS Audio system, which allows any of its cartridges to be used with any of the energisers, needs to be auditioned both as a package, and in mix 'n' match mode. Depending on your responses, you might end up saving money… or spending more.

It is also important to note that this energiser, like the Master models, allows you to choose between balanced XLR and single-ended RCA outputs, with a choice of 30Hz and 50Hz filters. I certainly preferred the balanced output, while the filters came into play when I switched loudspeakers from Quad ESL63s [*HFN* Sep/Oct '81] to Falcon Acoustics LS3/5As [*HFN* Dec '18], and then to Wilson Sasha DAWs [*HFN* Mar '19]. And these settings can be easily determined by ear, because the DS-W3's delivery is as revealing as any you will hear, especially at the frequency extremes [see PM's Lab Report, p71].

> 'Like a Denon DL-103 on steroids? Yes, it's that huge'

Another issue to consider is how the DS Audio DS-W3 – indeed, all DS cartridges – seems immune to tonearm influence. I tried it in a straight carbon-fibre-tube arm, a J-shaped metal-tubed arm and a straight titanium arm, and the tracking, silences and other concerns remained so truly constant that it was a struggle to differentiate between them. Indeed, even with a severely-warped LP, in a deck costing 1/10th the price of the entire package, the DS-W3 tracked without complaint.

## WIDE OPEN

Although I tried both DS Audio's least expensive energiser and the Master model, I settled on the DS-W3 cartridge/energiser pictured and tested here as it's this natural pairing that really concerns us. My notes include mention of the superbly recorded Muddy Waters and The Rolling Stones live set *Checkerboard Lounge – Live Chicago 1981* [Eagle Vision/Ward VQBD-10107], where the initial impact was the recreation of the club's soundstage, so airy and so wide open and perfectly defined that I immediately thought of it as 'Denon's DL-103 on steroids'. Yes, it's that huge.

I was able to match liner notes to lineups, so even a non-musician like me could distinguish Ron Wood's guitar from that of John Primer, and Mick Jagger's distinctive vocals struggling to match the legitimacy of Muddy Waters' gruff tones. What the new DS Audio system brought to the performance was an opening up of the sound such that a listener with forensic tendencies could more easily home in on a particular performer. ⇨

## LIGHT SPEED

**Strictly speaking, while all DS Audio's phono cartridges use photo-electric technology – derived from the guitar pick-ups and computer mice of the Digital Stream 'optical device development' company – they still 'pick-up' from the groove using a mechanical stylus and cantilever. However, the stereo current that's output via the DS-W3's L+ and R+ terminal pins is derived from the light of two fixed, narrow-beam 5V LEDs (one per channel) shining on a pair of photocells. This output directly reflects the passage of the stylus through the analogue groove because the LED light paths are partially interrupted by what DS Audio calls a 'shading plate' – a lightweight beryllium film that's connected to the moving cantilever. The LEDs, meanwhile, are powered via the DS-W3's L– and R– pins using a proprietary PSU and equaliser [inset picture].**

**Because DS Audio's photo-electric conversion is sensitive only to the *amplitude* of the movement of the stylus, unlike velocity-sensitive MC/MMs whose output increases with both groove excursion and frequency, the DS-W3 requires only a relatively subtle HF boost to realise a 'flat' response with all RIAA pre-equalised LPs [see Lab Report, p71]. So while DS Audio's various 'optical' pick-ups can be mixed-and-matched with its range of PSU/Eq boxes, none are compatible with traditional phono preamps (and vice-versa). PM**

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**ABOVE: Rear view of the DS-W3's PSU/equaliser. The pick-up's internal 5V LED is powered via the R– and L– pins while the output is returned via R+ and L+, through the 'input' RCAs. The equalised outs, on RCAs and XLRs, are filtered at either 30Hz or 50Hz**

Still with live material, and even more illuminating, was *Eric Clapton's Crossroads Guitar Festival 2019* [Rhino/Reprise RI 628789], with a stellar lineup including Jeff Beck, Buddy Guy, Sheryl Crow, Bonnie Raitt, Keb' Mo' and of course, Slowhand himself. I could only marvel at the way the cartridge emphatically recreated the sound of each guitar, Fenders vs. Gibsons, solid-bodied vs. semi or acoustic.

I don't want to portray the DS-W3 primarily as a tool for analysis, and seasoned listeners know that too diagnostic a sound can be fatiguing, because the DS Audio 'sound' is both unforgiving, revealing warts and all, while also being gently ameliorative, *eg,* the way it handles warps. On 'Baby, Please Come Home', with Jimmy Vaughan on guitar and Bonnie Raitt on vocals, the fear of 'too much information' proved groundless.

## MISSION IMPOSSIBLE

Too much information? This track places a traditional electric blues band in front of a horn section, with a massive, Hammond-y organ pumping away. What resulted was the near-impossible combination of a Spector-esque 'Wall of Sound' but with such precision that nothing was swamped by the rest. Better still was the sensation of stage depth, which – if one could look at the soundstage from above – was a big, fat oval stretching from wall to wall.

Sailing through the mono tracks on the The Beatles' ...*The Christmas Records* [Apple/Universal 02557 91485] also proved revelatory. These remastered transfers from what were only previously available on low-fi flexi-discs, a lone compilation LP from 1969, also of so-so sound quality, or via bootlegs which were needle-drops of either, were elevated to another level entirely by DS Audio's duo.

## YULE LOVE IT

While regarded merely as the Fab Four fooling around in the studio to offer an annual thanks to the Official Beatles Fan Club's members, the details exposed by the DS-W3 were ear-opening – even to this aged fan who's heard them countless times. The festive sound effects and snippets of chat revealed as much as any documentary about the band's evolution when all seven singles were played chronologically. And the mono aspect? Rock-solid central positioning, even from coloured vinyl 7in discs. I am dazzled.

**ABOVE: Cartridge pins are gold-plated, clearly marked and usefully spaced. Note that the DS-W3 can only be employed with one of DS Audio's purpose-designed LED power supply and equalisers [top]**

## HI-FI NEWS VERDICT

**With the DS-W3 pairing, DS Audio has again created an upgrade which – rather than confound previous owners – increases the number of choices while reinforcing the avoidance of obsolescence. New to the brand? Buy the package. Existing user due for an upgrade? Either component will yield a boon. The DS-W3 is among the best yet, certainly at the price point, and I'll despair when it's returned.**

Sound Quality: 88%

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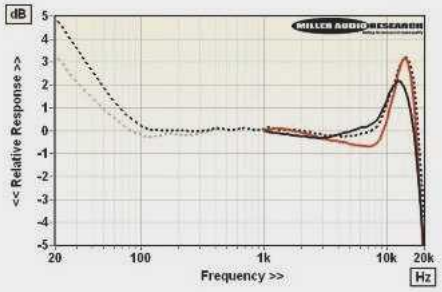
# LAB REPORT

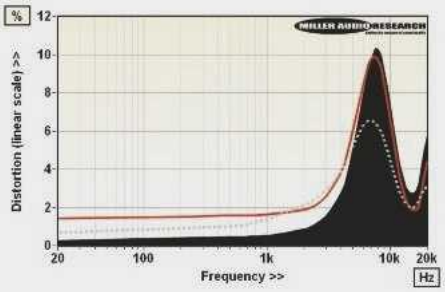
## DS AUDIO DS-W3

Three years ago, DS Audio leveraged advances in its then-flagship Master 1 [*HFN* Dec '17] to 'evolve' the DS-W1 [*HFN* Nov '15] into DS-W2 [*HFN* Jan '19], and it has performed the same trick with the new DS-W3, which borrows heavily from the current flagship Grand Master [*HFN* Feb '21]. Except, in this case, the 'upgrade' from DS-W2 to 'W3 is more significant than from 'W1 to 'W2. Specifically, the 'W3 now has the 'dual mono' generator with separate L/R LEDs, a lighter shading plate and thicker internal wiring that we saw in the Grand Master. It benefits from a reduced moving mass which pushes the 'W2's 13kHz treble peak out to a higher 15kHz in the 'W3, also at a less severe +3.2dB amplitude [see Graph 1]. The improved light path has tightened the channel balance to 0.2dB, and widened HF stereo separation from a poor 6dB (W2) to 15dB (W3, re. 20kHz) while conferring better lateral/vertical symmetry – this is evident in both the response and distortion versus frequency plots [see Graph 2].

The bass boost, seen in all previous DS cartridges, amounts to +3dB/20Hz with the 50Hz filter in tow or +4.5dB/20Hz with the 30Hz filter, neither being especially useful when partnered with big, reflex-loaded speakers. DS Audio has attempted to counter this by 'stiffening' the compliance of the DS-W3 away from the 15cu of the 'W2 closer to the 11cu of the Grand Master while also increasing the downforce from 1.7g to ~2g. This pushes the arm/cartridge resonance upwards, but tracking suffers slightly, the DS-W3 only clearing a 70µm groove pitch and moderate +15dB modulation (315Hz lateral cut, re. 11.2µm) at <2% THD. The 2.1V output (1kHz/5cm/sec) is a function of the equaliser. **PM**




**ABOVE: Frequency response curves (–8dB re. 5cm/sec) lateral (L+R, black) vs. vertical (L–R, red) vs. stereo (dashed, 50Hz filter, grey; 30Hz filter, black)**




**ABOVE: Lateral (L+R, black), vertical (L–R, red), stereo (dashed) tracing and generator distortion (2nd-4th harms) vs. freq. from 20Hz-20kHz (–8dB re. 5cm/sec)**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Generator type/weight** | Photo-optical / 7.9g |
| **Recommended tracking force** | 18.5-20.5mN (19.5mN) |
| **Sensitivity/balance** (re. 5cm/sec) | 2068mV / 0.18dB (from Eq unit) |
| **Compliance** (vertical/lateral) | 12cu / 15cu |
| **Vertical tracking angle** | 22 degrees |
| **L/R Tracking ability** | 65µm / 70µm |
| **L/R Distortion** (–8dB, 20Hz-20kHz) | 1.0–6.6% / 0.55–7.5% |
| **L/R Frequency resp.** (20Hz-20kHz) | +3.6 to –3.9dB / +5.5 to –0.6dB |
| **Stereo separation** (1kHz / 20kHz) | 24dB / 15dB |

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# Auralic Altair G1.1

Now benefitting from the latest updates to Auralic's Lightning streaming platform, the 'starter' Altair DAC also features a raft of mechanical and detailed design improvements

Review: **Jamie Biesemans** Lab: **Paul Miller**

Although Auralic (promoted as AURALiC) only launched the Altair G1 in 2020, the Chinese brand already has its G1.1 update available. It appears together with the Aries G1.1 as the new and more affordable options within their respective tiers, with the Altair and Aries G2.1 [*HFN* Oct '21 & Feb '21] being the more expensive models. However, as all Auralic products share a very similar chassis design and carry names that aren't very descriptive, it's sometimes difficult to discern which box does what [see Sound Off, p116].

In the case of the Altair brevity suffices – this digital hub is equally an ESS9038Q2M-based DAC, a streamer and even a media server/music library, if so desired. The Aries, on the other hand, is purely a digital transport, for use with an outboard DAC, while the Vega is a streaming DAC minus the server capability. Currently, there's only the Vega G2.1 available [*HFN* Oct '22] but priced at £6799 it's not a straight alternative to the arguably more versatile £2499 Altair G1.1 reviewed here.

## CORE APPEAL

The Altair G1.1 is highly adaptable, lacking only digital outputs for use with an offboard DAC, even if the change in moniker from G1 to G1.1 doesn't sound especially ambitious. In the IT world a '0.1' update typically indicates a minor tweak and here the move from 1 to 1.1 is equally indicative of an incremental polish rather than wholesale change of core hardware.

The new satin silver plinth is eye-catching while the additional mass is claimed to better damp the ingress of vibrations. Auralic also counts a superior 'Femto' clock as part of the G1.1 upgrade, though jitter was always inherently low on the Altair/Aries/Vega platforms [see PM's Lab Report, p75]. The built-in headphone amp has witnessed a little extra beefing-up and although this feature might not be high on every Altair owner's wish list, it's reassuring to know it'll be able to drive more challenging cans.

Typically, the Altair G1.1 will be married with existing separates. That shouldn't be an aesthetic challenge, as the no-frills approach and the matt black metal case make it a suitably minimalist companion to most hi-fi gear. That said, the finish is quite lush in a sober and understated way, with a single volume/rotary encoder provided to twist/push and browse your way through the settings. A larger LCD display shows off album art, and in a pinch can be used to adjust an option or two. But the bespoke Lightning app is easier to use.

Although the emphasis here is on wired and wireless network streaming and, optionally, playback from internal storage (a 2TB SSD can be dealer installed), the Altair G1.1 possesses a range of digital inputs. External storage remains an option too; just hook up an outboard drive to the USB-A port [see rear picture, p75]. Connecting a laptop is possible through the USB-B port, while Toslink optical, coaxial and AES/XLR options are there in case you want to connect a separate digital source, such as a TV or a CD transport. As you should expect at this price point, both single-ended and balanced XLR analogue outputs are provided.

## STRUCK BY LIGHTNING

Next to sound quality, ease of use is probably the most important quality of any streamer. It's obvious now, but Auralic was once a real trend setter in this regard with even early products controllable via the rather excellent Lightning app [see boxout,

**RIGHT: Linear PSU [top] feeds screened area [bottom left] containing surface-mount ES9038 DAC, headphone amp [under heatsinks] and balanced audio out. Note Intel wireless card [bottom] and SATA dock [blue] for external HDD**

**ABOVE: Colour display sits above the restyled plinth, revealing your library of albums and songs in addition to helping navigate the system/setup menu via Auralic's Lightning app**

below]. Before Roon came along and other brands caught up, it offered one of the best user experiences on a streamer. And, arguably, Lightning is still superior to many.

This slick app offers total control of the Altair G1.1, including input switching, Internet radio and playback of your local or network-based media library. A select offering of streaming services are accessible through the app. Qobuz, Tidal and Amazon Music are the ones that'll interest most readers, but Germany's specialist highresaudio.com is there too. Beyond mere service integration, the app goes the extra mile by presenting metadata – including album art, release lists and bios – attractively, enticing you on a journey of musical discovery. Auralic seems to stay on top of things too, pushing out regular firmware updates to add features, such as autoplay on Qobuz, which plays relevant tracks after your playlists have finished.

> 'Grungy guitars sound fat and full-bodied'

However, this lavish app is only available for iPad or iPhone (control of the Altair G1.1 is most satisfying on the former), which means the millions of Android users are left in the cold, which is hard to understand in 2022. Still, Auralic does offer compatibility with popular alternatives – the Altair G1.1 is Roon Ready, but Tidal Connect and Spotify Connect are there too, and if you download a DLNA player app (such as BubbleDS) you can control this DAC/streamer by that method too.

Auralic's Lightning app is also the gateway to a very extensive roster of options, although on a laptop or Android device you'll have to access these features through a browser. There's more stuff here than you'll probably ever use, yet a lot of it is useful, such as the optional volume control or being able to disable unused streaming options. Furthermore, should you wish to invoke additional DSP, it's even possible to compensate for irregular loudspeaker placement or compensate for a room mode via the app's parametric equaliser. So the Altair G1.1, beyond streaming, adds another layer of control over your system's sound.

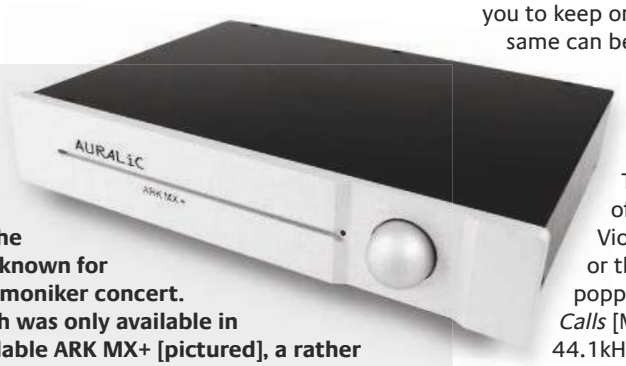
## LISTENING PLEASURE

For some brands, offering a copious feature set and a superb user experience would have sufficed. But Auralic's entry-level streamer doesn't economise on audio quality either: the G1.1 is a smooth, organic-sounding performer, offering a vivid sense of detail and timing – without overanalysing or offering the definitive insight you might discover higher up the range. Just as the Lightning app entices you to keep on consuming music, the same can be said about the way the Altair G1.1 presents music, regardless of genre.

'Keep on listening' is very much the mantra. Take the rousing portrayal of the second part of Blue Violet's 'Vanished In The Night', or the duo's more enveloping, poppy 'Poster Girl' on *Late Night Calls* [Me&My Records MMR006V; 44.1kHz/16-bit]: these are conveyed with a real feeling of intimacy by the Altair G1.1, with a well-defined spread of instruments and a particularly fine delivery of Sarah Gotley's vocals.

In this instance, the streamer showed itself to be an excellent complement to a Hegel H590 amplifier [*HFN* Oct '18] and a set of B&W's new 702 S3 loudspeakers. The sound only edged slightly into forward territory; not in a fatiguing way, luckily, ⇨

## AURALIC'S ANCESTRY




**While most hi-fi brands will often shout about their heritage, Auralic's origins are shrouded in mystery. The brand is not very old, founded in 2008 after Xuanqian Wang and Yuan Wang met at the Waldbühne, Berlin's open-air venue best known for the annual end-of-season Berliner Philharmoniker concert. Their first product was the ARK MX, which was only available in China. It was followed by the widely available ARK MX+ [pictured], a rather straightforward DAC sporting a futuristic industrial design later replaced by the more contemporarily dressed 'G' generation. Sources are currently Auralic's primary focus, but previously it offered amps, such as the Merak monoblocks or the Polaris – a very early entrant into the now popular streaming amplifier segment. Auralic was also in the vanguard of hi-fi app development, at a time when other companies were floundering in this virtual space. Serendipitously, founder Xuanqian Wang had the skillset to make it happen. 'I came from an engineering and software background so I knew how important user experience was, and how to organise a software team to develop such a product.'**

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but in a 'nice to discover there's more to this recording' way.

Swapping the B&W 702s for my regular Focal Sopra N°2s [*HFN* Sep '15] found grungy guitars on William The Conqueror's *Proud Disturber Of The Peace* [Chrysalis BRV18; 44.1kHz/24-bit] portrayed fat and full-bodied, while clarity abounded on the more acoustic songs. This release hails from Cornwall, but at some points wanders off in the direction of Nashville, before quickly changing course for '90s Seattle. It's quite a journey on a finely recorded album, and the G1.1 rendered the genre-spanning rock tracks in a satisfying manner, with a focus on the overall presentation which let the songs really come together.

## ALL THAT JAZZ

Blue Note-mainstay Robert Glasper released *Black Radio III* earlier this year, but it's still his 2015 *Covered* album [Blue Note B002285602; 96kHz/24-bit] – a live recording from Capitol Studios – which remains a particular favourite. This magnificent set has a cosy, small room feel to it, even when the audience reacts to the accomplished playing. Daimon Reid's drumming on 'I Don't Even Care' is fast, intricate, and full of detail, and the G1.1 offered it all up in thrilling fashion. This album features some of the best jazz musicians of our time, and while this unit isn't Auralic's high-end DAC offering, there's nothing entry-level about the performance here.

Auditioning the four digital filter options offered by the G1.1 [see PM's Lab Report, opposite] turned out to be worthwhile. These are custom filters, a mixture of linear and minimum phase types, with both slow and fast roll-offs. Regardless of their origins, they have a noticeable impact, meaning you can be rewarded for dabbling during listening sessions. 'Smooth', which according to Auralic was the most popular choice during its in-house subjective testing, gave *Homage To Bach* by The Brodsky Quartet [Chandos CHAN20162; 96kHz/24-bit] a slightly recessed but also a more coherent character, while 'Precise' tended to lift out the intricate, wandering solo violin in Sonata No.1, BWV 1001.

## COVERING ALL BASES

Listening further, it became clear these two filter options represent the extremes of what's on offer. On the other hand, both 'Dynamic' and 'Balance' take a less outspoken approach, with the last of those two lacking a bit of liveliness when heard in my particular set-up. However, regardless of the filter selected, these sonatas by Bach are rendered engagingly with just the right amount of warmth and depth, giving you enough insight to focus on the nuances brought by each stringed instrument of the quartet.

Ultimately, the sonic character of the Altair G1.1 can be described by the same 'do it all' terminology as its functional description. This is a streamer/DAC that covers all bases and does so with panache.

## HI-FI NEWS VERDICT

**The Altair G1.1 is not only a rather fine contemporary USB DAC – it's also a versatile network-attached streamer that makes playing and discovering new music a joy. These are potent ingredients, ensuring the G1.1 is much more than just a very compelling sonic upgrade for your system. In practice you'll also get to reap the benefits of its slick, app-driven 'usability' with oodles of options to explore.**

Sound Quality: 86%

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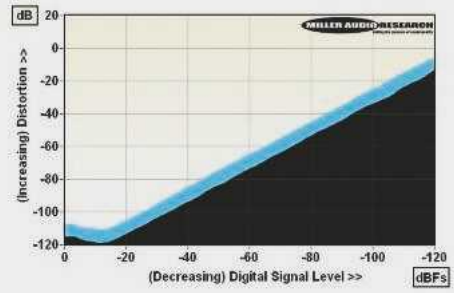
# LAB REPORT

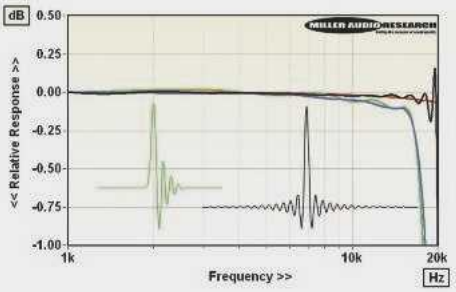
## AURALIC ALTAIR G1.1

In common with the earlier Altair G1, this G1.1 variant offers some user-selectable 'sound tuning' in the form of four alternative digital filters – Precise, Dynamic, Balance and Smooth. The response is flattest with all sample rates via the Precise filter, a fast roll-off linear phase type [red trace, Graph 2] offering a respectable 83dB stopband rejection (but with extended pre/post ringing) reaching out to –0.1dB/20kHz, –0.7dB/45kHz and –2.2dB/90kHz with 48kHz, 96kHz and 192kHz data respectively. The Dynamic filter is an apodising type [black traces, Graph 2] that shows ±0.15dB ripples just prior to its –1dB limits of 20kHz, 44kHz and 73kHz with 48kHz, 96kHz and 192kHz media, but offers a full 92dB stopband attenuation and less group delay than 'Precise'. The Balance filter is a slow roll-off linear phase type [blue trace, Graph 2] with reduced pre/post ringing but a poor 14dB stopband rejection and earlier treble roll-off. 'Smooth' [green traces] is a minimum phase version of Balance, these latter two filters showing off their best at higher sample rates.

With the Precise filter as default, the Altair G1.1 delivers a useful 4.2V output from a low 5ohm source impedance. The ESS9038Q2M DACs maintain a low 0.0003-0.0005% distortion (20Hz-20kHz), falling to 0.00005-0.0002% over the top 15dB of its dynamic range [see Graph 1], and while Auralic specifies its own '72 Femto Master Clock' the jitter rejection of these ESS DACs is already well proven, this falling to <10psec across all sample rates and inputs. The A-wtd S/N is a wide 114dB and resolution is good to ±0.1dB over a 100dB dynamic range and ±0.3dB over a full 110dB, suggesting a 19-bit resolution for the Altair G1.1. Finally, midrange channel separation is a very wide 130dB, falling to a still-impressive 105dB at 20kHz. **PM**




**ABOVE: Distortion vs. USB 24-bit digital signal level over a 120dB range at 1kHz (black) and 20kHz (blue)**




**ABOVE: Time/freq resps. (1kHz-20kHz; 48kHz data) – Dyn, black; Balance, blue; Smooth, green; Precise, red**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Maximum output level / Impedance** | 4.16Vrms / 4.8ohm |
| **A-wtd S/N ratio** (USB / Network) | 114.4dB / 114.0dB |
| **Distortion** (1kHz, 0dBFs/–30dBFs) | 0.00025% / 0.0003% |
| **Distortion & Noise** (20kHz, 0dBFs/–30dBFs) | 0.00045% / 0.0005% |
| **Freq. resp.** (20Hz-20kHz/45kHz/90kHz) | +0.0 to –0.1dB/–0.7dB/–2.2dB |
| **Digital jitter** (48kHz / 96kHz) | 6psec / 8psec |
| **Resolution** (re. –100dBFs / –110dBFs) | ±0.1dB / ±0.3dB |
| **Power consumption** | 12W (1W standby) |
| **Dimensions** (WHD) / **Weight** | 340x80x320mm / 7.4kg |

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# Atlas Arran Transpose

hi-fi news EDITOR'S CHOICE

Newly launched to fill the void between its Mavros and flagship silver Asimi ranges, these Arran cables might just be the sweetspot in the Atlas portfolio. Review & Lab: **Paul Miller**

While audiophiles might ordinarily associate the 'home of the brave' with Linn Products, Scotland is also home to the hand-made Atlas Cables. Its new Arran interconnects and speaker cables are a clear evolution, taking inspiration from its solid silver Asimi range [*HFN* Dec '18], utilising the same geometry but with OCC (Ohno Continuous Casting) copper.

The more affordable Mavros range also uses OCC copper but contains a mix of solid and *stranded* conductors. In common with the Asimi flagship, the Arran speaker cables (priced £4795/2m and £5995/3m sets) get closer to the ideal of a 'single' solid strand with an air dielectric. In practice, each signal/return conductor comprises six OCC copper strands, four at 1.2mm² and two at 1mm², each strand shrouded in a cotton weave with microporous PTFE tape atop.

The six strands are then twisted and held in more PTFE tape, packed in a cotton filler and screened with an alloy/mylar film and woven copper braid. Running through the screen are two drain wires, 180° apart, and connected to the Grun terminal [see picture, below], which should be routed to a dedicated earth or equipment chassis. A soft PVC covering and royal blue fabric completes what amounts to a reassuringly heavy but not especially compliant cable. Atlas's Lux leather sleeves are a further £275/m option.

**LEFT: Arran is a heavyweight cable of limited flexibility. The 'Transpose' plugs allow a wide range of user-specified connectors to be fitted, including expanding 4mm bananas, Z-plugs and spades**

The 'Transpose' termination is directly crimped onto the copper conductors and will accommodate a wide variety of end plugs. Your choice doesn't affect the cable's lumped parameters, including the impressively low 7.3mohm/m series resistance, and insignificant 0.008dB/m power loss. (The Asimi has lower resistance still but its six strands are fractionally thicker and silver is a superior conductor.) Parallel capacitance is a low 98pF/m and inductance a moderate 0.47µH/m. All told, the Arran Transpose is an excellent choice for long runs, cost notwithstanding.

## OHNO? OH YES...

I experienced the impact of Atlas's Arran with both the DALI KORE [p40] and next month's cover star, the Wilson Audio Alexia V, via a Constellation Centaur II 500 amplifier [*HFN* Dec '19] and was struck on both occasions by just how transparently it 'stepped out of the way'. Ultimately this is what we all want from a cable: to open up the sound of our systems to their fullest potential without shining a light, or drawing the curtains, on any particular aspect of performance. So jazz trumpeter Gabriel Mervine sounded as vital and potent, and yet as intimate as you might care to imagine with his backing trio on *Say Somethin'* [Octave Records; DSD64]. The brassy rasp was immediate and yet the ambience remained warm and close – the Arran coaxing these speakers to render their most compelling and colourful musical pictures.

Low resistance also brings deep and powerful bass – with sympathetic ancillaries. And so with the Scottish Chamber Orchestra's 40th anniversary recording of Wagner's 'Siegfried Idyll' [Linn CKD540; 192kHz/24-bit] the sound was richly detailed, as it should be, at once sweet, clear and with striking instrumental power and textures. Whatever the album, Arran sets the tingle factor to stunning.

**LEFT: The signal and return conductors are supported at each end of the cable by an alloy barrel. One end has the Grun termination – the black plastic cap unscrews to reveal the ground connection. Atlas supplies an insulated wire that runs between here and an earth point**

## HI-FI NEWS VERDICT

**If you are seriously contemplating a no-nonsense high-end cable upgrade then the Arran should be one of a mere handful of contenders on your radar. It is exceptionally well-built and finished, presents no wayward electrical properties that limits its application to length or equipment and, as important, provides a potent foil for the all-silver Asimi which is *significantly* costlier. It will reinforce everything you love about the sound of your system!**

Sound Quality: 89%

0 - - - - - - - - - 100

# Johann Strauss II
# *Die Fledermaus*

'The Bat' has charmed audiences for almost 150 years, but does the fizz stay fresh or fall flat on record? **Peter Quantrill** raises a glass to the ultimate New Year's operetta

Johann Strauss's third operetta was an instant hit when it opened at the Theater an der Wien in April 1874. Austria had suffered a stock-market crash the previous year and audiences were in the mood to rinse away their troubles with buckets of sekt and a slice of escapist nostalgia. Strauss set to work and sketched the whole operetta in six weeks, boiling down a typical, if confused-looking, medley of German farce, French vaudeville (the original story by Meilhac and Halévy) and Viennese adaptation.

The advantage of these several sources was its ready supply of different entertainments within the same piece. *Die Fledermaus* satisfies the advice to 'make 'em laugh, make 'em cry' and throws in the circus (or, at least, a lot of dancing or cabaret).

## POPULAR APPEAL

The plot suggests the authorities are inefficient, deaf, drunk and/or open to corruption. It fulfilled at the time an audience-pleasing fantasy that a chambermaid could convincingly impersonate her employer and achieve a dream career onstage as a result. It set out hints, but never the reality, of adultery at both a classy dinner-dance and on the sofa of Eisenstein's house. The stage direction placing this house 'in a little town outside Vienna' is a double delight. No-one in the capital is accused of louche behaviour, while various in the potential audience could flatter themselves that they were being specifically identified.

**Viennese born and bred, Clemens Krauss in his element, conducting at the Musikverein**

**Time for a song: Gundula Janowitz's Rosalinde takes over in the 1971 Unitel film directed by Otto Schenk**

The composer also entwined three styles of dance music in *Die Fledermaus*: the popular, the balletic and the ballroom. The mixture of song, speech and dance in a 'popular' plot – one where the audience could imagine themselves in the story – anticipated the birth of the American and French musical and over the years has proved uniquely attractive to both amateur performers and grand opera houses.

Nevertheless, the popular appeal of *Die Fledermaus* has not readily transferred to record (or film, for that matter, despite the efforts of directors Ernst Lubitsch and Michael Powell/Emeric Pressburger, among others). If you're looking for a true-Viennese stereo *Fledermaus* on CD, a 'library choice' with classy conducting and stylish singing together with top-notch engineering – well, I have bad news for you.

There isn't even a CD issue of the first almost-complete recording, made in 1907 by the G&T company, sung and conducted by Bruno Seidler-Winkler with tremendous flair (head to YouTube for a surprisingly clean transfer of the 78s). All the versions listed in the Essential Recordings [opposite] enter fully into the spirit of the piece, but they are either mono, or on film, or they come with a 'buyer-beware' caveat.

## GUESTS OF HONOUR

Decca had originally engaged Josef Krips to record *Die Fledermaus* for the new LP format in 1950. When he phoned in sick, Clemens Krauss was persuaded to return from his holidays, and the result is a gramophone classic. I can do no better than echo Carlos Kleiber's praise, writing to his friend Charles Barber: 'Krauss and his crew are by turns committed and distanced, never pasteurised or bent on proving anything. It's dry like very fine French champagne, which, as we know, doesn't "taste" as "good" as cheaper imitations. Maybe it's a dialect? I, for one, can't bring it off'.

> 'Apparently Kleiber would collapse into giggles'

Carlos, of course, was flattering to deceive. He knew well enough that no one else since Krauss had (or still has) mastered the insouciant flick of the waltz rhythms, the sharp point of the upstairs-downstairs satire, the effortlessly casual style of the ensembles or the homesick abandon of the mock-Hungarian czardas sung by Rosalinde in Act 2.

Kleiber's 1975 studio set is no less ebullient and fantastically detailed than his predecessor's. Both of them leave out the second-act

ballet, and the Krauss recording omits all the dialogue, so that the listener must fill in the plot for themselves if the set isn't to feel like a bag of highlights. The unavoidable flaw of Kleiber on DG, meanwhile, is the casting of Ivan Rebroff, who sings the trouser-role of Prince Orlofsky in a Hinge-and-Bracket head voice. Kleiber himself apparently could barely complete a take without collapsing into giggles; for most of us, it's funny once.

For Kleiber plus a uniformly fine cast and the sense of event which every *Fledermaus* should have, turn to DG's film of the 1987 Bavarian State Opera production by Otto Schenk. As Orlofsky, Brigitte Fassbaender almost steals the show. She reprised the part in 1990 for Philips; there's nothing wrong with the rapport between Previn and the VPO, but to my ears Kiri Te Kanawa as Rosalinde and Edita Gruberová as Adele sound too much like versions

PHOTO: MIKE HOBAN

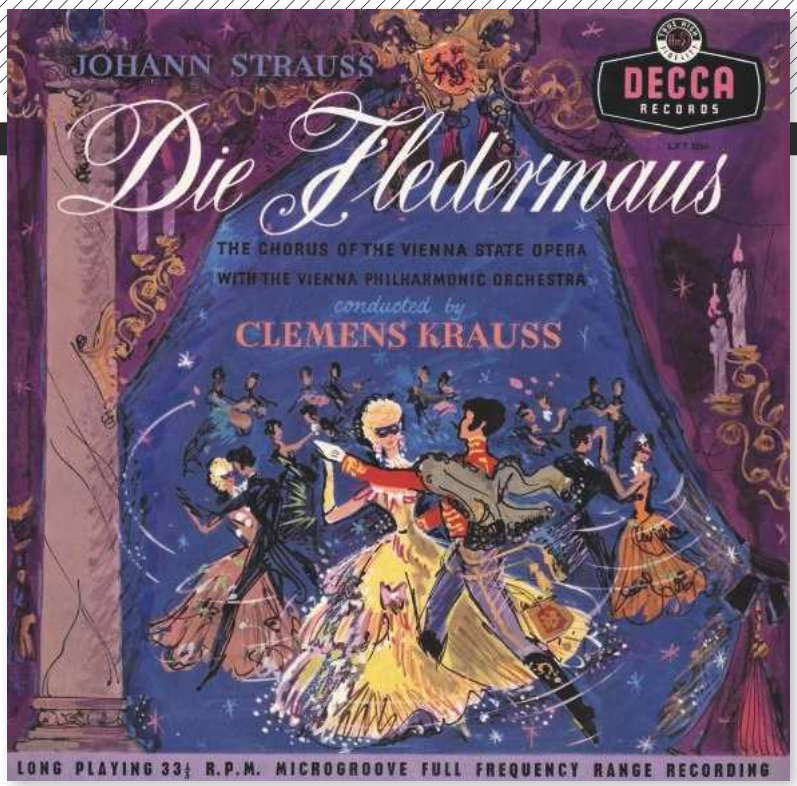
**Mistaken identities: Eisenstein (Thomas Allen) flirts with the disguised Rosalinde (Pamela Armstrong) in Glydebourne's 2003 film**

of their former selves and not enough like their roles.

The third K to lavish a serious maestro's care over the piece was Herbert von Karajan. His stylishly watertight 1955 recording, cast and co-masterminded by Walter Legge, takes the then-unusual alternative casting of Orlofsky as a baritone (Rudolf Christ, full of lazy *hauteur*), but follows Strauss's own wishes for the casting of a proper tenor (Nicolai Gedda) as Eisenstein rather than the more usual baritone. Elisabeth Schwarzkopf's Rosalinde will always divide listeners: immaculate, but hardly infused with feeling.

From just five years later, Karajan's second recording lays on the Viennoiserie much thicker: less a fault of the musicians than Decca's

**The original cover for Krauss's 1950 recording, now in an 'original jackets' box of the conductor's Decca legacy**




studio-spectacular engineering, with or without the album-length 'Gala' of vocal celebrities at the second-act ball. The more interesting sequel is Legge's, as a stereo remake for HMV/EMI, with Otto Ackermann steering the Philharmonia. The dialogue alone puts most other versions to shame for its wit and clarity. Alas, there's no up-to-date CD release.

## LATE ARRIVALS

As for the rest: once on Denon, Erich Binder's version is a fun souvenir for anyone who has seen the piece at its modern home of the Vienna Volksoper, smothered in stage and audience 'business'. Dame Joan Sutherland's New Year farewell to the Royal Opera House (Arthaus) falls into the same, repeatedly unrepeatable category. Whatever Nikolaus Harnoncourt was trying to prove (Warner Classics), he never brought it off the page, despite the opulent Concertgebouw playing.

Led by the Croatian Oskar Danon, RCA's 1964 set from Vienna is worth hearing whether complete in German (headlined by Adele Leigh's Rosalinde) or as highlights sung in modern English (Richard Lewis and Anna Moffo beautifully matched as husband and wife). Further studio-made highlights and variably recorded live recordings abound – but for a party worth returning to, stick with Kleiber and Krauss.

## ESSENTIAL RECORDINGS

**VPO/Krauss**
Eloquence Decca 4827379/4841704 (2/16CDs)
No shortage of greasepaint or depth of field to the latest remastering of Decca's mono-era engineering at its finest.

**VPO/Böhm**
DG 0734371 (DVD), 4756216 (2CDs)
A 1971 Unitel film with a soundtrack Decca issued separately, featuring a cameo from director Otto Schenk as the jailer Frosch.

**Bavarian St Op/Kleiber**
DG 0734015 (DVD)
An international but Munich house cast, all coached by Kleiber to the last upbeat, led by Eberhard Wächter's Eisenstein.

**Glyndebourne/Jurowski**
Opus Arte OA0890D (DVD), OABD7004D (BD)
A rare modern success, updated to the era of Freud and flappers. The fizz never goes flat but we're aware the party will be over soon.

**NDRPO/Foster**
Pentatone PTC5186635 (2CDs)
First-class modern engineering in a live context, and a decent cast starring Elisabeth Kulman's aristocratic Orlofsky.

**WDRSO/Haider**
Capriccio C5167 (2CDs)
Another sound German radio production (this time in the studio) led by a dab hand at operetta, with a youthful-sounding cast.

**STEVE SUTHERLAND**

Steve edited NME from 1992-2000, the Britpop years, launching NME.com and reviving the NME Awards. Previously he was Assistant Editor on Melody Maker. Among his many adventures he has been physically threatened by Axl Rose, hung out awhile with Jerry Garcia and had a drink or two with Keith Richards...

# Pink Floyd *Animals*

For the group's tenth album, Roger Waters put his own spin on George Orwell's famous parable. The result was 'nobody's favourite Pink Floyd LP', says **Steve Sutherland**

Kate Bush had her Bronte. And her Joyce. The Doors had their Blake via Huxley. Dire Straits had their Shakespeare. Led Zeppelin had their Tolkien. The Police had their Nabokov. It seems like since time immemorial rock and pops stars have plundered literature for lyrical inspiration. Even Ozzy had his Crowley. And Pink Floyd were no exception.

For the Floyd – or more specifically Roger Waters – it was Orwell's *Animal Farm*, although in the band's early days, when Syd Barrett was briefly the leader, Kenneth Grahame's *Wind In The Willows* provided the title for the group's debut album, *The Piper At The Gates Of Dawn*.

Once Waters assumed control, Pink Floyd took a turn away from the hippy-dippy stuff towards far darker material. *Ummagumma*'s 'Careful With That Axe Eugene' was aural schlock horror for headphone acid-heads, while 'One Of These Days' ('One of these days I'm going to cut you into little pieces'), which opened *Meddle*, was nicely psychotic. And by the time they'd arrived at 1973's *Dark Side Of The Moon*, a sociological cynicism had crept into the Floyd's work, a nihilism that couldn't get over the fact that, no matter how many daft rituals we create for ourselves, we are all going to die, even the greedy rich. Call it fatalism.

## LEADING THE WAY

The band's tenth LP, *Animals*, was largely Waters' work. Previous composition contributors David Gilmour and Richard Wright were waylaid by personal concerns, leaving Waters to enthusiastically grab the rudder. His fellow band members gave him an inch, and he took a fair few miles. With a megalomaniac energy, Waters foisted a morbid view upon Pink Floyd and, hence, upon us all. The irony, of course, was that in imposing his iron will upon the group, he was acting in the same way as the dictatorial regimes he took to berating.

> 'Pink Floyd had taken a turn toward far darker material'

What was most immediately apparent was he'd fallen out of love with pretty much everything about being rock royalty. As Pink Floyd came to make *Animals*, Waters seemed to view his profession as a trifle, useless unless it was trying – and succeeding – into hammering some sense into the lame-brained dolts who bought his records and maintained his luxurious lifestyle. Of course, losing respect for your audience is a dangerous place to find yourself career-wise, but it can also be invigorating artistically, allowing a freedom of expression and experimentation that pandering to fan expectations won't allow.

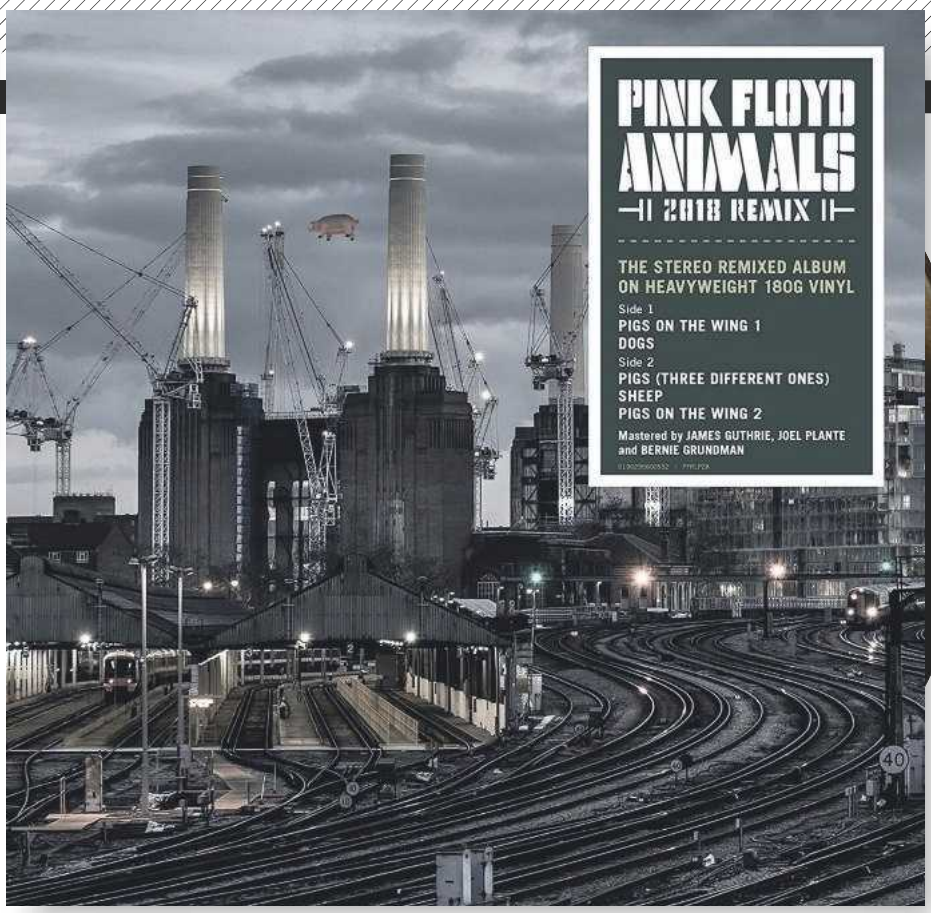
This is all by way of a lengthy preamble to the fact that *Animals* is probably nobody's favourite Pink Floyd LP. To be honest, listening to it, top to tail, is not what you'd call an enjoyable experience. Nor was it meant to be.

## FOUR-LEGGED FIENDS

Back to *Animal Farm*. In George Orwell's book, published in 1945 as a disgusted comment on the failure of Russian communism, the pigs – aristocrats, *etc*. – rule, and the sheep – that's us – meekly do their every bidding; the revolution to overthrow the hierarchy eventually leading to more of the same. In essence it's The Who's 'Won't Get Fooled Again', but Waters' version does allow a chink of hope into the scenario; Stalinism is replaced by capitalism, the dogs are the baddies and the sheep ultimately do 'em in.

Still, it's a brooding, ominous work spread across three very long tracks – 'Dogs', 'Pigs (Three Different Ones)' and Sheep – book-ended by a couple of fragments. It's also what you might call a bit stodgy, devoid of the knowing humour that occasionally raised its head above the parapet on previous Floyd releases.

Pink Floyd pose for the camera in the 1970s (l-r) Richard Wright, Roger Waters, Nick Mason and David Gilmour and (inset) label of the original LP on Harvest

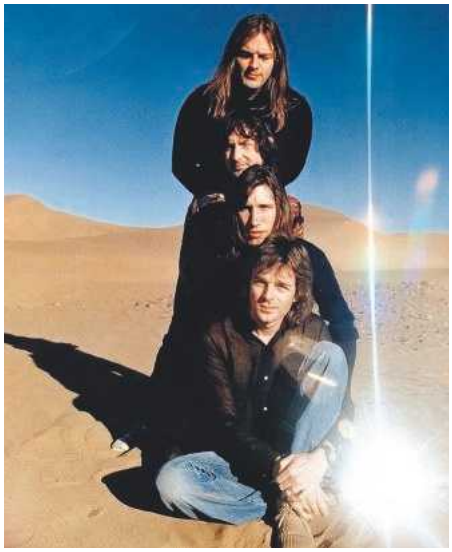



**Priced £22.99, the 180g reissue of *Animals* by Pink Floyd is available to order online at *www.amazon.co.uk***

Upon its debut in January 1977, *NME* called *Animals* 'one of the most extreme, relentless, harrowing and downright iconoclastic hunks of music to have been made available this side of the sun'. *Melody Maker* said it was an 'uncomfortable taste of reality in a medium that has become in recent years increasingly soporific'. *Rolling Stone* magazine chimed in too: 'Floyd have turned bitter and morose. They complain about the duplicity of human behaviour (and then title their songs after animals – get it?). They sound like they've just discovered this – their message has become pointless and tedious.'

## AND PIGS MIGHT FLY

*Rolling Stone* had a point. A problem with *Animals* is that Orwell's book, hardly a subtle piece, had by-and-large become a cliché by the time Waters seized upon it. I recall, back in the early 1980s, Edwyn Collins of post-punk band Orange Juice – an erudite fellow with a grand sense of humour – sharing a joke where Paul Weller, fumbling his way to political conviction, would proclaim: 'Hey, I've just read this great book. It's called *Animal Farm*! You should read it!'



**Gilmour, Mason, Waters and Wright pictured in the desert in the 1970s**

Anyway, it's probably fair to say that *Animals* is more famous for its cover, where a giant inflatable pig floats over the wreck of Battersea Power Station, than it is for its musical or lyrical content. The album's mismatch of symbolism and delivery was soon rectified by its follow-up, the grandiloquent Wall project which amplified *Animals* a millionfold with its infamous presentation and lyrical cynicism. The Wall concept was born during the 'In The Flesh Tour' that was meant to promote the *Animals* album. On the final date in Montreal, Waters felt that the rowdy audience down the front weren't affording his work the attention it deserved and he spat at them, which led to him devising the idea of building a wall between himself and his undeserving fanbase.

## BOILING WATERS

These days Roger Waters will have nothing to do with Pink Floyd. He tours and releases records as a solo act and remains relentless in his opinionating. Like him or loathe him – and it's actually possible to do a bit of both – he still sees conspiracies and injustice hidden in plain sight, everywhere. Our blind ignorance infuriates the poor fellow to boiling point, making him just as likely to rail against the West's support of Ukraine in its struggle against Russia, or rant about one of his recent gigs not being covered by the local press in Toronto.

Indeed, the latter incident is indicative of Waters' worldview. On discovering his omission from local news was because music journalists had chosen to review gigs by The Weeknd and Drake instead, he said: 'With all due respect to The Weeknd or Drake, I am far, far, far more important than any of them will ever be, however many billions of streams they've got. There is stuff going on here that is fundamentally important to all of our lives'.

## RE-RELEASE VERDICT

In 2018, long-term Pink Floyd engineer James Guthrie completed a new stereo remix of *Animals*, but its release was delayed until now by squabbling between Roger Waters and David Gilmour. The 180g vinyl [Pink Floyd Records PFRLP28] features gatefold packaging and a 32-page booklet, plus reimagined cover art designed by Aubrey Powell of Hipgnosis. A 'Deluxe' edition adds CD, Blu-ray and DVD-Audio copies, the latter two with 5.1 mixes also by Guthrie. *HFN*

Sound Quality: 83%

0 - - - - - - - - - 100

# Hawkwind *In Search Of...*

For their groundbreaking sophomore album, the West London-based 'space rock' masters doubled down on the electronic audio effects, moved beyond the live jam feel of their free concerts, and invited fans to join them as they set out on a voyage to the stars...
Words: **Mike Barnes**

Label for side 1 of the original UK LP

The band in early 1971 (l-r) Dave Anderson, Dave Brock, Dik Mik, Terry Ollis and Nick Turner

A shot from 1974 with Lemmy (third from right), who joined in August 1971

Cover of 'The Hawkwind Log', the booklet designed by artist Barney Bubbles that came with the LP

Dave Brock pictured in the studio in 1972. He co-founded the group in 1969 with bass player John Harrison

Musicians' fascination with space, and their attempts to evoke its unfathomable vastness in sound, dates back at least as far as Ancient Greece. It was Pythagoras who developed the concept of Music Of The Spheres, a theoretical cosmic harmony produced by the movement of the planets and stars that could translate into music.

This theory was still in vogue in the 16th century, where it was espoused by German astronomer Johannes Kepler, although he thought these galactic vibrations could be felt, rather than heard. And the notion of the sounds of space also ran through composed music: Joseph Haydn's opera *Il Mondo Della Luna* (or *The World On The Moon*) was premiered in 1777; Gustav Holst's orchestral suite *The Planets*, completed in 1917, evoked the moods and characters associated with these celestial bodies; and 1960 saw the release of *I Hear A New World: An Outer Space Music Fantasy* by Joe Meek.

## GOT THE X FACTOR

Into the 1970s these notions of space chimed with the expanded mindset of psychedelic and progressive rockers and their quest to transcend the mundanity of the everyday and seek out new musical worlds. Pink Floyd had journeyed from the pastoral outskirts of Cambridge out towards the stars on 'Cirrus Minor' and 'Set The Controls For The Heart Of The Sun', but no group lived and breathed this cosmic voyage quite like Hawkwind.

The band had started out as Group X, and captured the attention of DJ John Peel with their first live performance when they basically gate-crashed a gig at All Saints Church Hall in Notting Hill, West London. Group X soon changed their name to Hawkwind, and although they never claimed to be particularly good musicians, they definitely made the most of what they had.

In these early years the group were active on the Notting Hill/Ladbroke Grove freak scene, when it was still a low-rent, un-gentrified area. Hawkwind would hang out and distract the staff members at the offices of underground magazine *Frendz* on Portobello Road, and in return for their support, played benefit gigs for the publication.

The band budgeted the money they received from paid gigs to fund their free concerts, and made themselves generally accessible. Saxophonist Nik Turner admits that if anyone approached him to play a benefit for a worthy cause he would most likely say 'yes'. For example, at The Isle of Wight Festival in 1970, as a protest against high ticket prices and the way that the festival was run, Hawkwind played with a number of other groups for free on a covered stage set up outside the festival that they called Canvas City.

> 'Turner saw himself as a jazz player in a rock band'

Hawkwind's self-titled debut album, released in 1970 by Liberty Records, was essentially a rendition of their live set, bookended by two songs from guitarist and vocalist Dave Brock's previous work as a busker. The band were avid participants in the drug culture of the day, but on the sleeve notes they distanced themselves from it by saying of their fans, 'We are trying to levitate their minds, in a nice way, without acid'. Consisting of instrumental jams and riffs punctuated by eerie incantations, the album showed the influence of Pink Floyd on the drum patterns and group improvisation of 'Be Yourself', while also looking over to Germany and bands like Amon Düül II from the exploratory krautrock scene.

## SPACE INVADERS

Turner essentially saw himself as a free jazz player residing in a rock 'n' roll group, and fed his saxophone and flute through a multitude of effects pedals. Bandmate Dik Mik, *aka* Michael Davis, provided futuristic electronic sounds from his audio tone generator, which he bought from an electronics shop on Tottenham Court Road. This was basically a piece of kit you might find in a school physics lab, fed through effects. On their next album, 1971's *In Search Of Space*, Dik Mik was joined on VCS 3 and other synthesisers from EMS by Del Dettmar, who until this point had been mixing the group's live sound.

*In Search Of Space* was a much more accomplished album. The LP came in a die-cut fold-out sleeve ⇨

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After the album was released, bass player Dave Anderson (far left) was replaced by Lemmy

Dancer Stacia (far right) in this shot from 1972

Nik Turner plays sax on stage in 1974

Now a cinema – Olympic Studios in Barnes

Del Dettmar (top right) is pictured on the trifold LP sleeve

## PRODUCTION NOTES

Following an earlier session at AIR Studios in London, where the group assembled to record a version of 'Master Of The Universe', Hawkwind's record label moved the band into Olympic Studios in Barnes [see p88] with George Chkiantz on engineering and co-production duties.

Chkiantz had pioneered the effect of flanging on The Small Faces' 1967 hit 'Itchycoo Park' and stereo phasing on Jimi Hendrix's 'Bold As Love', and applied these effects to the end section of 'Master Of The Universe'. Meanwhile, 'You Shouldn't Do That' had emerged from the lengthy jams the band had played at Canvas City outside the Isle Of Wight Festival in 1970. The recorded version was open ended, but its structure was shaped by musical cues.

'That cowbell at the end that just keeps going – we were meant to finish there, but then we all came back in again and did another bit', drummer Terry Ollis later recalled. 'The whole thing was very organic.'

'Adjust Me' was an even more spontaneous piece, made by editing two studio improvisations together.

The final track, 'Children Of The Sun', was a last-minute addition to the running order, apparently because the album had come up five minutes short. It was mainly performed by Anderson and Turner, although the former had already quit the band after an alleged attempted assault with a weapon by Dik Mik.

Brock recalls the studio playback of the album: 'We all took LSD and listened to the album when we had finished it. I remember "You Know You're Only Dreaming", and listening to Dik Mik trying to make seagull noises on his audio tone generator.' designed by Barney Bubbles with a booklet called 'The Hawkwind Log', which had been put together by Bubbles and Robert Calvert – who was soon to join the band live onstage as their 'space poet'.

The idea here was to help make the listener feel that they were a part of the group's strange voyage. '"The Hawkwind Log" was the log book of a spaceship', Turner told me in 2013. 'It was based on lots of mythological and philosophical theories about time travel and space travel. The ship had landed on earth and become two-dimensional. The actual plastic disk was all that was left of the craft and the crew, and the log book was about their story and adventures.'

> 'It sounds like some kind of fantastical craft taking off'

### RELENTLESS RIFFS

This is made apparent right from *In Search Of Space*'s epic opening song. The electronic introduction to 'You Shouldn't Do That' sounds like some kind of fantastical craft taxiing then taking off, and Hawkwind then lock into a relentless mantric riff – essentially two chords – for nearly 16 minutes with solos punctuated by unison sections. At times the band chant the title with Brock ominously intoning, 'You try so hard to get somewhere/They put you down and cut your hair'.

'You Shouldn't Do That' is driven by Terry Ollis's insistent bass drum, and Brock has explained that its forward motion was inspired by the rhythms of old New Orleans jazz bands. Meanwhile, bass player Dave Anderson has cited the bassline on Free's 'Alright now', with its octave jumps, as another influence. Anderson told Hawkwind biographer Joe Banks, 'There was something special between me and Terry. We ended up being like a clockwork motor – once we got into a groove, we were unstoppable.'

The second track, 'You Know You're Only Dreaming', features verses framed by wah-wah guitar, and develops into a spacey jam that evokes the atmosphere of the band's first album. The other big number on ⇨

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**The group pose for a photo in late 1970 and (below) Dave Brock grins at the camera in this shot of the current lineup taken in 2022**

*In Search Of Space* is 'Master Of The Universe', which is based around a chugging metal riff simple enough to be tackled by budding guitarists.

Turner sings the song from the perspective of a deity, a creator looking down in despair at how his work on this planet has been despoiled. This tack continued with 'We Took The Wrong Step Years Ago', an acoustic song based on Rachel Carson's 1964 book *The Silent Spring*, on which Brock warns us about how we are potentially heading for environmental catastrophe, and Dik Mik and Dettmar send their electronic signals up through space, signposting a way to a better world than this one.

The improvisational 'Adjust Me' incorporates a varispeed address from an android and meanders to a close in a rather unfocused way, before *In Search Of Space* reaches a peaceful conclusion with Anderson and Turner's 'Children Of The Sun'. This begins with strummed acoustic guitar, gradually bolstered by electric guitar chords and Turner's flute lines. It includes the lyrics, 'And this is our inheritance', although given what has preceded it, these words introduce a note of unease!

## WE HAVE LIFT OFF

The album, the first recorded as part of Hawkwind's new deal with label United Artists, was generally well received by the music press and eventually climbed to No 18 in the UK charts.

> "'Once we got into a groove, we were unstoppable"'

It also set the template for Hawkwind's best work. With input from Robert Calvert and science fantasy writer Michael Moorcock, they took their audience further on a celestial voyage with their 1972 hit single 'Silver Machine'; their studio album of that year, *Doremi Fasol Latido*; and their 1973 double live album, *Space Ritual,* Hawkwind's ultimate statement of cosmic exploration and hypnotic rock power.

# Alternate Format Discography

### ORIGINAL VINYL LP

*In Search Of Space* is unusual in that even among band members its title is disputed. On the LP label and spine it is referred to as *In Search Of Space*, but Barney Bubbles' artwork has the title as *Xin Search Of Space* and some even call it *X In Search Of Space* – although there is no space between the first two letters.

The first copies were released in the UK in October 1971 on the United Artists label [UAG 29202]. The full-colour cover featured Barney Bubbles' logo, while a blurred picture of naked onstage dancer Stacia Blake graced the rear.

The trifold cover opened up into a stylised 'hawk' shape with pictures of the group, lyrics and credits in blue monochrome on the inside. Also present – but not on all European releases – was the 'Hawkwind Log'.

A 1971 Japanese LP was released in a gatefold sleeve with a monochrome group shot [Liberty LLP-80663]. Ollis had left the band by this time so new drummer Simon King is shown. The LP came out the next year in the US, with fold-out sleeve and 'Hawkwind Log' [United Artists UAS 5567].

Thereafter, most vinyl LP pressings came in simpler covers without the booklet, although it was reinstated when the album was repressed in 1977 for UK release [United Artists UAG 29202].

### 8-TRACK AND CASSETTE

*In Search Of Space* received an 8-track release in the UK and US on United Artists [U-8368]. The first UK cassette, released in 1971 in a grey shell with orange labels, had a different running order, with 'Adjust Me' following 'You Shouldn't Do

That' on side one, replacing 'You Know You're Only Dreaming' [United Artists TCK 29202 0368, pictured above].

### FIRST CD

The album made its silver disc debut in the UK in 1989 on EMI [CDFA 3192] and was then reissued on EMI's budget Fame label in 1991 [CD-FA 32192]. In the same year in the US and Canada, One Way Records put out a standard CD and limited edition longbox [CDLL-57474].

Another CD release in the UK, in 1996, came in a digipak with a 24-page booklet [EMI Premier 7243 8 37553 2 5, pictured below]. Remastered by Paul Cobbold and Peter Mew, it included the single versions of 'Seven By Seven' and 'Silver Machine', and a live single version edit of 'Born To Go'.

A remastered 2015 Japanese HQCD, released by Parlophone and Japanese label Wowwow Entertainment [IECP-10324] added 'Silver Machine', plus 'Seven By Seven' in both original and remixed versions.

### AUDIOPHILE VINYL

A 180g LP in a single sleeve arrived on EMI's Simply Vinyl series in 2000 [SVLP 266], followed in 2011 by Back On Black's 180g double album in a gatefold sleeve. Bonus tracks were the same as the 1996 CD, and it came in a choice of black, red or white vinyl [RCV011LP].

JODIMARR

# Olympic Studios

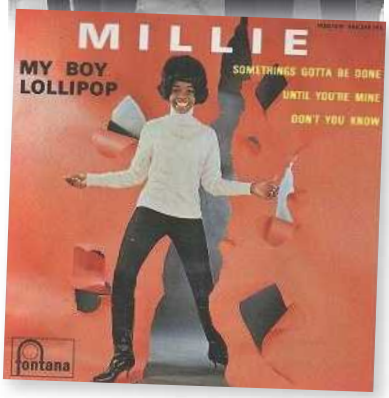
From Dusty to Deep Purple, The Beatles and The Stones, in the '60s and '70s this studio quickly became home to pop and rock's leading lights. **Steve Sutherland** has the story

So, here's how you do it. Take two synchronised tape copies of a finished recording and play them simultaneously into a third master recorder, all the while manually retarding the rotation of one of the two tape reels by pressing on the flanges, manipulating the phase difference between the two sources. Easy-peasy. Now you can flange.

You can what!? Flange. You know that brilliant bit near the end of The Small Faces' 'Itchycoo Park' where everything goes all wobbly and trippy and it sounds like a plane's landing on the drum kit? Well, that swooshing effect is called flanging and, despite a few others claiming to have invented the technique, for the purposes of this article we're attributing it to a geezer named George Chkiantz, a British engineer who worked his audio magic at Olympic Studios in London.

**The old artists' entrance to Olympic Studios. Today the complex is a boutique cinema and cafe. Inset shot shows the inside of the control room in 2008**

**The Rolling Stones with Brian Jones (second from right) in 1962 and (right) Millie Small's 'My Boy Lollipop'**




It was Mr Chkiantz who gifted fellow engineer Glyn Johns [*HFN* Nov '18] the effect for 'Itchycoo Park' in 1967, before it was taken up and stereophonic-ed by Eddie Kramer for Jimi Hendrix's wondrous psychedelic masterpiece *Axis: Bold As Love*, brought to life via The Experience.

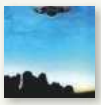
This was also at Olympic, which it's no exaggeration to say, was the creational scene of more wow moments and sheer masterpieces than pretty much anywhere else in that most fecund period for music as the '60s morphed into the '70s.

## TUBES TO TRANNIES

The studio started with a visionary chap with failing eyesight called Angus McKenzie who purchased a going enterprise called Olympic in the early 1950s from a fellow called Larry Lyons. It was based in Fulham but McKenzie moved it lock, stock and barrel to a derelict synagogue situated at Carlton Street, near

## KEY RECORDING TIMELINE

**1963**
The Rolling Stones record their first UK single at the studio – a cover of Chuck Berry's classic 'Come On'



**1972**
The Eagles check in with producer Glyn Johns to lay down tracks for their debut album. It goes platinum

**1972**
David Bowie helps Mott The Hoople produce *All The Young Dudes*, which on release will go Top 30 in the charts

**One of the first records to feature flange – 'Itchycoo Park' released by The Small Faces (left) in 1966**

**The cinema at Olympic Studios opened in 2013 and boasts seats sourced from Norway wrapped in red felt, plus a Dolby Atmos 3D sound system**

**In October 1963, Dusty Springfield recorded her debut solo single 'I Only Want To Be With You' at Olympic, with Keith Grant engineering**

**Procol Harum pictured on the sleeve of their 1967 hit 'A Whiter Shade Of Pale' (left), label of UK release on Decca (inset) and (far right) Toni Visconti in 2016**

Piccadilly Circus in the West End. In cahoots with a technical wizard named Dick Swettenham, he opened Olympic's Studio One with the valve-based recording console from Fulham. But this was soon replaced by Swettenham, who designed the world's first professional transistorised desk and had it installed into Studio One during 1960, along with the first four-track tape recorder in England.

## STONE LOVE

A gentleman named Keith Grant, who'd previously worked at Regent Sound and IBC, was poached and soon promoted to senior sound engineer where he oversaw the recording of, among many others, Dusty Springfield's debut solo single 'I Only Want To Be With You', The Yardbirds' 'For Your Love', Millie Small's 'My Boy Lollipop', The Troggs' garage classic 'Wild Thing' and The Rolling Stones' debut, 'Come On'.

In 1966, Grant's boss was notified that the lease on Carlton Street would not be renewed. McKenzie had lost his eyesight completely and decided he wanted out so he sold his share of the company to Cliff Adams and John Shakespeare. In turn, they tasked Grant with finding new Olympic premises.

Grant tracked down a derelict studio belonging to Guild TV in Barnes, South West London. Situated at 117 Church Road, the building had been constructed in 1906 and was known as Byfeld Hall, a theatre for the Barnes Repertory Company. Grant built the new Olympic studio here and among the first clients were The Rolling Stones, who liked it so much they went on to use it for *their* run of classic albums from *Between The Buttons* in 1967 through *Their Satanic Majesties Request*, *Beggars Banquet*, *Let It Bleed* and *Sticky Fingers*.

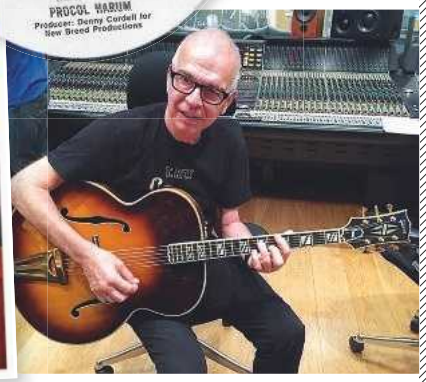
Among the first hits to be recorded at the new studio was Procol Harum's 'A Whiter Shade of Pale', produced by Denny Cordell. The assistant at the time was Tony Visconti [*HFN* Dec '16], who went on to produce David Bowie and T. Rex amongst many others.

'We were frantically trying to finish Procol Harum's first album at Olympic', recalled Visconti. 'A "Whiter Shade Of Pale" came out at the end of May and was a huge hit. Denny and I were walking in the hallway that separated Studio One and Two and bumped into Brian Jones who was working on tracks for *Their Satanic Majesties Request*.

'Brian was dressed in what looked like a French nobleman's jacket in a shade of blue and made of crushed velvet, with frilly, laced cuffs sticking out; he was also wearing makeup. Brian said, "Hey man, I love the Procol Harum single. I heard it on Radio Caroline, and I've just sent my chauffeur out to buy it for me".'

## IT'S A WRAP

One of the new Olympic's main attractions was another Dick Swettenham invention, a 24-input 'wrap-around' console, which utilised Lustraphone transformers and germanium transistors. Grant recalled its genesis: 'The problem with most desks is that if you want to do some things, you've got to stand up, go tweakle, tweakle, tweakle, and then sit down again. I'm basically sedentary, ⟳



MALCOLM DOHERTY

**1975**
Engineer Keith Harwood is on hand for the mix-down of Led Zeppelin's platinum-selling *Physical Graffiti*

**1997**
The Verve record *Urban Hymns* with producer Chris Potter at the controls. The album sells ten million copies

**2014**
Pink Floyd release *The Endless River* including tracks recorded at Olympic during the 1993 *Division Bell* sessions

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which is a posh word for being lazy! But if you're adjusting an EQ, you want to adjust it from where you're sitting. You don't want to be standing up and moving forward into the sound pitch while adjusting the EQ, because when you sit down it sounds different. So we designed the desk so everything was in your hands and you didn't have to move your head more than necessary'.

## STEEL THE NOISE

Within a couple of years, a remix room (which would later become Studio Three) and a second studio had been added to the complex, both fitted with 'Olympic' desks hand-built by Swettenham and his team in their basement workshop.

One problem was that Studio Two became popular with rock bands and the sound would bleed through the walls into Studio One where an orchestra might be trying to record.

The solution was to rebuild the second studio as a floating box on rubber pads, created out of tons of steel and with air conditioning. Once the door was closed, the sound was sealed in. It opened in 1969, Mick Jagger designing the decor.

Swettenham quit around now to form his own console manufacturing company, Helios, but still continued to supply tech to Olympic and advice to the engineers. 'The camaraderie there was of the highest', recalled Grant. 'If you were needed to help somebody else, it wasn't a question of, "Oh, that's not my job!". We'd all get stuck in. It worked like that right across the board… We all were equal and nobody was actually in charge. You knew what you had to do and you did it. The arrangement worked and it was fabulous… The bands loved it…

'Keith Richards would come and play on somebody else's record and Mick Jagger and John Lennon would turn up and do something. Lennon's Rolls Royce would often be outside, even though he wasn't working. They used the place as a floating nightclub base. From one o'clock in the morning, there could be anybody in there. They'd turn up to hang out and then get involved in each other's sessions.'

> 'Studio Two was built as a floating box on rubber pads'

In May 1967 The Beatles had taken a break from their regular haunt, Abbey Road Studios, and had recorded 'Baby, You're A Rich Man' at Olympic. They'd enjoyed the experience and returned to work up 'All You Need Is Love', 'Something' and 'You Never Give Me Your Money'. Paul McCartney and John Lennon then joined in with The Rolling Stones when they did their cheeky 'We Love You', their repost to the infamous Redlands drugs bust.

As already mentioned, Olympic was the favoured studio of Hendrix and it was here he produced his classic *Are You Experienced*, *Axis: Bold As Love* and *Electric Ladyland* albums. In keeping with the vibe at Olympic, Traffic's Dave Mason and The Stones' Brian Jones both lent a hand in the jam that led to Hendrix's celestial rendering of Bob Dylan's 'All Along The Watchtower'.

Other Olympic regulars were Led Zeppelin who used the facilities for the consecutive series of awesome albums beginning with their debut in 1969, through *II*, *III*, *IV*, *Houses Of The Holy* and *Physical Graffiti*. The Who, too, favoured recording at the facility in Barnes, doing *Who's Next* there in '71, followed by *Quadrophenia* and *Who Are You*.

## GLORY DAYS

We'd need a special supplement to document all the amazing albums wholly or partially recorded at Olympic, but here are a few to be going on with: Buzzcocks' *Another Music…*, David Bowie's *Diamond Dogs*, Deep Purple's *Fireball*, The Eagles' debut, The Faces' *A Nod's As Good…*, Hawkwind's *In Search Of Space* [see p82], Jethro Tull's *Stand Up*, Queen's *A Night At The Opera* and The Verve's *Urban Hymns*.

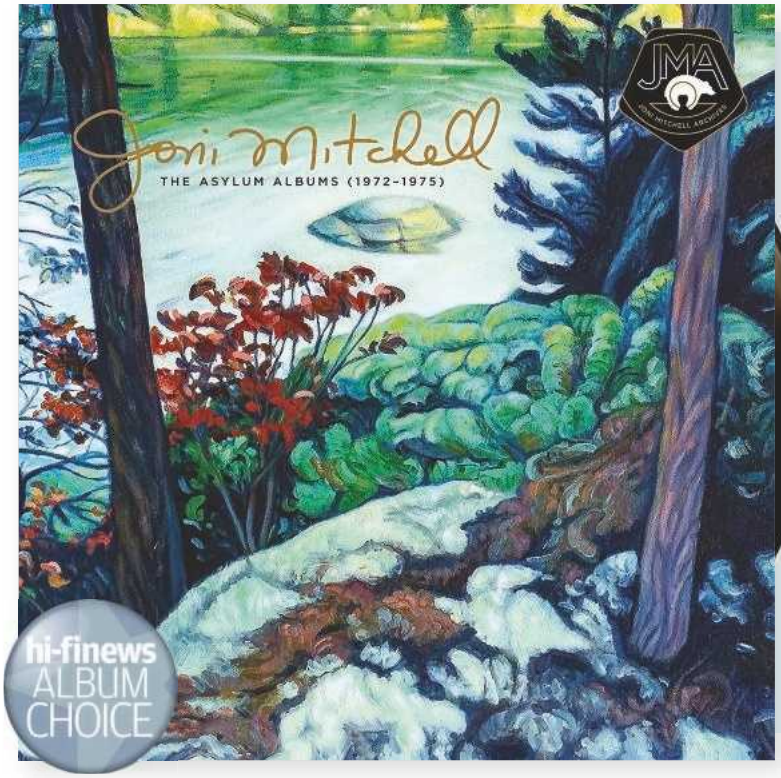
With recording studios generally on the downturn, Olympic was sold in 1987 to Virgin and it became EMI's when it took over Branson's label. Madonna, Adele, Oasis, Arctic Monkeys… the artists continued to arrive but 2009 saw Olympic closed, only to reopen in 2013, returning to its previous use as a cinema though it still retains a small studio in the basement, its glory days celebrated by a display of memorabilia.

**Label of the original UK mono release of *Are You Experienced* from 1967 and The Experience with Hendrix (top right)**

**On a sojourn from Abbey Road, The Beatles began recording the backing track for the song 'All You Need Is Love' at Olympic Studios on the 14th of June 1967**

**Deep Purple pose for a publicity shot in 1970, the year before they entered Olympic to record *Fireball*: (l-r) John Lord, Ritchie Blackmore, Ian Gillan, Ian Paice (centre) and Roger Glover**

# AUDIOPHILE: VINYL




## JONI MITCHELL

### The Asylum Albums (1972-1975)

*Asylum/Rhino R1 680935 5x180g LPs*

**This magnificent sequel to *The Reprise Albums 1968-1971* [Rhino R1 653984] could cause a few arguments, as that contained *Blue* – for some her greatest work. This, however, comprises no less than *For The Roses*, *Court And Spark*, *The Hissing Of Summer Lawns*, and the double live LP, *Miles Of Aisles*, a quartet of consecutive releases of such brilliance that few artists can boast such a run, perhaps only Dylan, The Stones, and The Beatles. Remastered by Bernie Grundman, pressed to perfection, original sleeves intact, it's hard to dispute that these represent her peak years. The title tracks alone support that, but 'Free Man In Paris'? 'You Turn Me On, I'm a Radio'? Another masterclass in genius. *KK***

Sound Quality: 95%

0 - - - - - - - - - 100

## AL DI MEOLA, JOHN MCLAUGHLIN, PACO DE LUCIA

### Saturday Night In San Francisco

*Impex Records IMP6045 (180g vinyl)*

Who knew there was more material to complement that audiophile classic, *Friday Night In San Francisco*? Up there with *Casino Royale* and Muddy Waters' *Folk Singer*, it gave us three of the world's finest guitarists in concert at the Warfield Theater in San Francisco, feeding beautifully off each other. Lo and behold, here are seven more numbers from the next evening, 6th Dec '80, and there's no overlap with Friday night. Mastered by Bernie Grundman from the original 16-track tapes and pressed at RTI, it is sublime, both the sound and the packaging, with no less than Di Meola on the team that curated it. *KK*

Sound Quality: 90%

0 - - - - - - - - - 100

## DONALD FAGEN

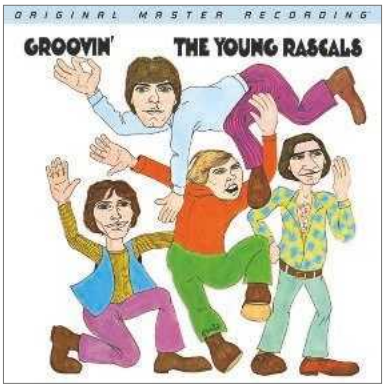
### The Nightfly Live

*Universal 02435 94449 (180g vinyl)*

Essentially a companion to April 2022's album of the month, *Northeast Corridor – Steely Dan Live!* [Universal 0243593920], here is another prime example of an increasingly popular subgenre, that of performing entire albums live *à la* Pink Floyd, Brian Wilson, *etc*. But this is so note-perfect that it begs an important question: why would you want to listen to it instead of the original release? Admittedly there are clues to the presence of an audience, and the sense of space is unlike that of the studio release, but fresh off listening to the One-Step, it was a case of '*déjà vu* all over again'. That said, the sound is sensational, the music as suave as ever. *KK*

Sound Quality: 90%

0 - - - - - - - - - 100




## THE YOUNG RASCALS

### Groovin'

*Mobile Fidelity MFSL 2-503 (two 45rpm LPs' mono)*

Curious, this, as it's in mono despite the original stereo being mind-blowingly good. Although The Young Rascals (who dropped 'Young' for their next LP) meant little here, the title track was their highest UK entry, No 8 in 1967, and I'd be surprised if you haven't heard it on oldies radio programmes, as well as 'How Can I Be Sure' and the bonus, 'It's A Beautiful Morning'. This is some of the earliest and best 'blue-eyed soul', real New York street-smart stuff, which surely inspired Willy DeVille, Hall & Oates and others. Staggering musicianship, powerful vocals – I can still picture Dino Danelli twirling his drumsticks on the TV debut for Ed Sullivan in '66. *KK*

Sound Quality: 85%

0 - - - - - - - - - 100

## KEITH RICHARDS

### Main Offender

*BMG BMGCAT5200CD (two discs)*

A Stones-heavy month, this expanded 30th anniversary edition of Richards' second solo album is presented here with an extra CD, but I'd have loved the inclusion of his version of 'Key To The Highway' from a Japanese release. Arriving halfway through The Rolling Stones' career, it dates from 1992, recorded between *Steel Wheels* and *Voodoo Lounge*. Effectively this is a get-together with friends such as supersession player Waddy Wachtel and drummer Steve Jordan (who replaced the late Charlie Watts for The Stones' 2022 tour), but it is pure Keith. The value is in the bonus disc: 12 tracks from his other band, the X-Pensive Winos, live in London the same year. *KK*

Sound Quality: 90%

0 - - - - - - - - - 100

## THE ROLLING STONES

### Licked Live In NYC

*Mercury/Universal 4553844 (2CDs + Blu-ray)*

This was an amazing year for The Stones, as it marked their 60th anniversary, and one of the ways they celebrated it is with this fine set from their 40th. The Blu-ray gives you the entire (2hrs 15m!) 10th January 2003 concert in the Big Apple, oddly in 4:3 rather than widescreen, along with just the music on two CDs, plus bonus material from Amsterdam and rehearsal footage. The scary thing about the video is that – the loss of Charlie Watts aside – little has changed in 20 years, especially not Mick Jagger, who must have a certain painting in his loft. Mainly Stones classics, among the high points is Sheryl Crow guesting on 'Honky Tonk Woman'. Still rolling indeed. *KK*

Sound Quality: 85%

0 - - - - - - - - - 100

## VARIOUS ARTISTS

### Audiophile Masters Vols III/IV/V/VI

*Octave Records OCT0013/0015/0017/0019 (SACD + DVD)*

Forgive me for squeezing these anthologies from PS Audio's Octave Records into one review, but the remarks apply to each entry, and they warrant attention if you have a top-flight digital playback set-up. Each release contains ten tracks from assorted genres, including jazz and American roots music, recorded in Octave's state-of-the-art studios, as both an SACD and a DVD Data Disk. This enables audiophiles – and the series' title makes no bones about the intended audience – to make comparisons as well as serving different computer-based applications. Uniformly, the sound is exceptional, while much of the content favours the unplugged. *KK*

Sound Quality: 85%

0 - - - - - - - - - 100

## THE BEATLES

### Get Back

*Apple BVSC-00004A (three Blu-ray Dolby Atmos discs)*

**As one who detested *Let It Be* – album *and* film – it was unlikely my opinion would change with Peter Jackson's eight-hour revision of the latter. But it is my duty to alert you to this three-disc set because it demonstrates 1) how high-res/high-def Blu-ray still butchers streaming, both visually and sonically, and 2) it's a £30 alternative to those who can't face subscribing to the lame Disney+ to see it (though you could watch it in the trial period and then cancel). Despite reviews which say this lightens up the gloom, I found it to be torture. As proof of Jackson's genius? Undeniable. Alas, Apple missed a trick: they could have included the *Let It Be* album on an audio-only Blu-ray, for those who resisted the £80 box set [*HFN* Apr '22]. *KK***

Sound Quality: 90%

0 - - - - - - - - - 100

# HI-RES DOWNLOADS

## LAKE STREET DIVE

Fun Machine: The Sequel (48kHz/24-bit, FLAC)

*www.lakestreetdivemusic.bandcamp.com*

**As the title suggests, this is the follow-up to *Fun Machine*, the 2013 album from the Brooklyn-based jazz/soul combo, plus an additional EP of covers, including a scintillating version of 'I Want You Back' and a smoky take on 'Rich Girl'. Founder/guitarist/trumpeter Mike 'McDuck' Olson has left so the new release features Akie Bermiss on keys and James Cornelison on guitar. But the heart of the band is still very much in evidence, in the form of bassist Bridget Kearney, drummer Mike Calabrese and stellar vocalist Rachael Price. Her shiversome voice headlines tracks ranging from The Pointer Sisters' 'Automatic' to 'Anyone Who Had A Heart', and keyboard player Bermiss's vocals are just as impressive on Shania Twain's 'You're Still The One'. Yes, the set's short and sweet, at just six tracks and 23 mins, but it's a beautifully-produced bargain download that sounds stunning. *AE***

Sound Quality: 90%

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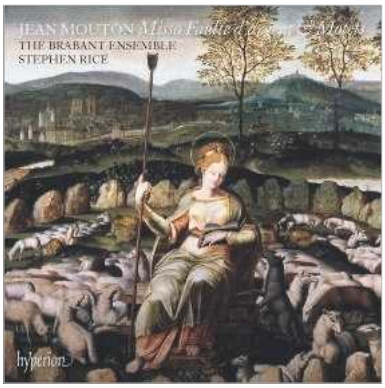

## BRABANT ENSEMBLE/STEPHEN RICE

Jean Mouton: Missa Faulte d'Argent & Motets (96-192kHz/24-bit, FLAC)

*www.hyperion-records.co.uk; Hyperion CDA68385*

We've had recordings of choral works by Josquin in these pages of late, courtesy of the Gesualdo Six – now here's an album of works by lesser-known near-contemporary Mouton, performed by an ensemble specialising in the music of the Flemish High Renaissance. It's more flamboyant and emotional than the strict sound of Josquin, and unlike the Gesualdo recordings, here there are both male and female voices, giving the sound an even lusher texture. As well as the title work, this generous set, running to 73 minutes, includes several of Mouton's big, complex motets. The voices soar into the space of St John the Baptist, Loughton, captured with crisp clarity and not just a little romantic ambience by engineer Oscar Torres and producer Jeremy Summerly. It sounds quite magnificent, and is well worth exploring. *AE*

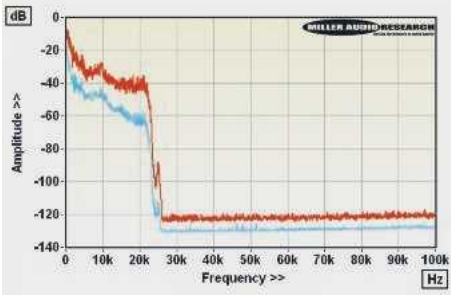
Sound Quality: 90%

0 - - - - - - - - - 100

## OUR PROMISE

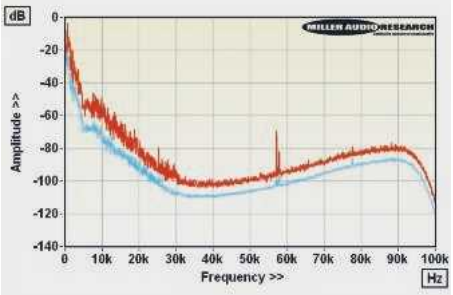
Following our Investigation feature [*HFN* Jun '11] where we examined the claimed quality of 'high-res' downloads, *Hi-Fi News & Record Review* continues to measure the true sample rate and bit-depth of HD music downloads. The Graphs show peak [red] and RMS [blue] spectra. These unique reviews will be a regular source of information for those seeking new and remastered recordings offered at high sample rates and with the promise of delivering the very best sound quality. (Note: an asterisk in the heading denotes a technical reservation – see Lab text). **PM**

## LAB REPORT




**The source for this multi-format release (vinyl, CD and 'digital') is this 48kHz file. Dynamic range is not particularly wide – the peak-to-RMS is a maximum of 10dB – but with all tracks normalised to –0.2dBFs the rendering is 'clean'. PM**

## LAB REPORT




**Available as 192kHz (where 57kHz spuriae is unimportant) and downsampled 96kHz 'Studio Master' files, both have adequate bandwidth to accommodate the voices. A 'natural' recording with no normalisation and good dynamic range. PM**

## ANNA FEDOROVA

### Rachmaninoff Piano Concertos Nos 2 & 4 (96kHz-192kHz/24-bit, FLAC; DXD; DSD64-512)

*www.nativedsd.com; Channel Classics 42522*

I've been following the career of Ukrainian-born pianist Fedorova since attending a Channel Classics recording session in Eindhoven a few years back, and spending some time with the pianist and Channel's Jared Sacks. Anna Fedorova has gone on to greater things since then, both appearing at this year's Ukrainian Prom and setting up her own music academy in The Hague. Her performance of 'Rach 2' is the most-viewed concerto video on YouTube, and it's not hard to hear why on this recording. Her playing in both works is superb, as is that of the St Gallen orchestra under Modestas Pitrenas, and the recording by Jared Sacks is exemplary, maintaining focus on the soloist while keeping the balance entirely natural. Performers and engineers alike have contrived to make this all sound deceptively easy (see also PQ's review, p101). *AE*

Sound Quality: 85%

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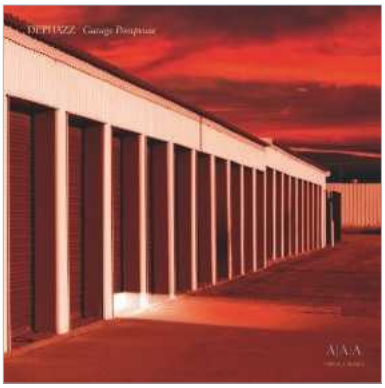


## DEPHAZZ

### Garage Pompeuse: The Berlin Session (96kHz-192kHz/24-bit, FLAC; DSD64-256)

*www.nativedsd.com; sommelier du son PHAZZ159*

Recorded live to analogue tape using a Studer A810 in Berlin's A-Trane Jazz Club back in August 2014, this set has now been transferred to DSD256 using a Mytek Brooklyn ADC. Both the original recording and the new transfer were made by sommelier du son's husband and wife team, Dirk Sommer and Birgit Hammer-Sommer. The release should allow a wider audience to appreciate the vocals of Pat Appleton and the spare arrangements of Ulf Kleinert, with a funky little band captured in an intimate club venue. It's a small ensemble – Markus Bodenseh on bass, Oli Rubow's drums, Matti Klein on Rhodes and Wurlitzer, and Frank Spaniol on sax and bass clarinet – but just when you think you've got the measure of the sound, Dephazz supremo Pit Baumgartner lets loose with a burst of synthesiser. It's mad, but very appealing. *AE*

Sound Quality: 85%

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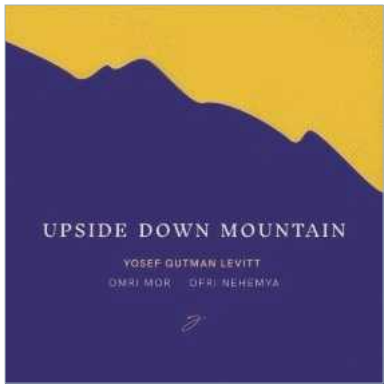


## YOSEF GUTMAN LEVITT

### Upside Down Mountain (48kHz/24-bit, WAV)

*https://yosefgutman.bandcamp.com*

Frontman Yosef Gutman Levitt came up with all the pieces on this album in a single sitting, which may well account for the fresh, immediate sense they all have. Born in South Africa and based in Jerusalem, the bass guitarist played on the New York jazz scene in the 2000s, moved to Jerusalem where he developed and then sold an Internet company, and now devotes himself to his seven children and 21 chickens – how does he find time to write? – and his music. Joined by pianist Omri Mor and drummer Ofri Nehemya, Levitt's music crosses the boundaries between conventional jazz, his roots and his current situation, with influences from many places. It's all captured in a wonderfully vibrant and intimate set of recordings that draw the listener in as they move from the reflective to the joyous. The works are all very simple, and yet simply beautiful! *AE*

Sound Quality: 80%

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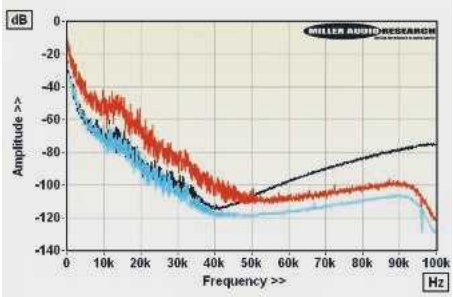
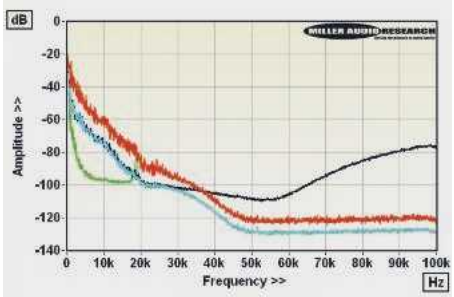
## LAB REPORT



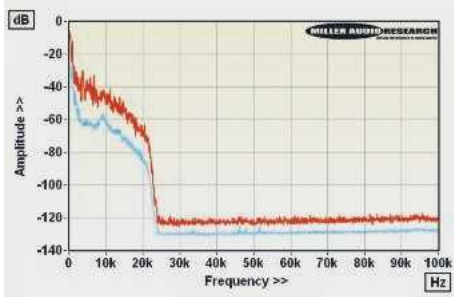

This native DXD recording (via Merging Technologies/Horus ADC) has ample bandwidth to capture the piano although the 0.0dBFs peaks [–5.6dBFs via DSD; black trace] are unnecessary given the 24-bit range. Otherwise it's 'clean'. **PM**

## LAB REPORT




This analogue recording has a good dynamic range (peak-to-RMS max's out at 26dB) even though trk 4 hits the 0.0dBFs wall [or –5.5dBFs on the DSD copy, black trace]. Note spurious tone on left channel of trks 1, 4-6 and 8 [green trace]. **PM**

## LAB REPORT




All tracks are normalised to –1.0dBFs so clipping is avoided, and dynamic range is average/good with a peak-to-RMS of ~16dB (trks 6 & 7). With upright bass and piano forefront there is less treble energy than typical, so may sound 'laid back'. **PM**

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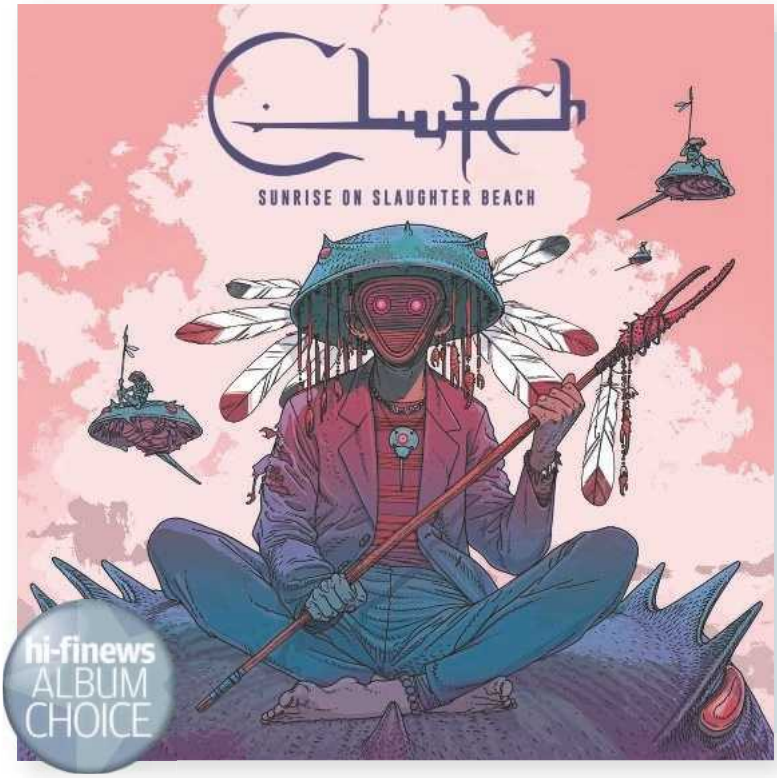


## CLUTCH

### Sunrise On Slaughter Beach

*Weathermaker Music CD WM144; LP: WM145*

**Clutch started out in the early '90s as a stoner rock band and traces of that era linger on in the theremin and psychedelic guitar of 'Skeletons Of Mars'. But they have since incorporated elements from blues, '70s heavy rock and '80s metal, which they have distilled into music of formidable potency. And unlike some of their hard-rock peers, their songs are essentially groove-based. Neil Fallon whips up the intensity like a preacher spouting fire and brimstone, with female backing vocals providing a lighter colour on 'Mercy Brown'. The excitement peaks on the driving rhythms and punchy metallic chords of 'We Strive For Excellence' and we are let down relatively gently by the soulful finale, 'Jackhammer Our Names'. *MB***

Sound Quality: 90%

0 - - - - - - - - 100

## ROBYN HITCHCOCK

### Shufflemania

*Tiny Ghost CDTG07; LP: LPTG07*

Hitchcock has a reputation of being an English eccentric and although he is in introspective mood here his thought processes still move in mysterious ways. 'The Shuffle Man' is filtered through The Beatles and Syd Barrett and set to a neo-rockabilly rhythm, but many songs are more low key – 'Noirer Than Noir' is fresh and limber, with spangly acoustic guitar, tuned percussion and dreamy vocal harmonies. His lyrical subjects include an existential tram journey across the universe and the death of Socrates, and he sings 'Respect the dead/you will be joining them soon' on a poignant 'The Man Who Loves The Rain', a song imbued with a love of life. *MB*

Sound Quality: 85%

0 - - - - - - - - 100

## PIXIES

### Doggerel

*BMG 4050538807363; LP: 4050538806854*

Pixies' fourth album since reforming in 2004 contains familiar elements: bulldozing rhythm guitar, crisp drum figures, and twangy lead lines that land between Surf and Country. Black Francis's feral scream has become tempered through age, but his lyrics are typically full of baffling non-sequiturs like, 'We done run out of all our tricks/We flew a plane with lion tamers/Back to Brazil in '66'. The songs are a tad slower these days but Francis claims that they tap into an 'extra special energy'. 'Haunted House' is full of structural twists while 'The Lord Has Come Back Today' – the tale of an uncertain second coming – is set to a supercharged pop melody. *MB*

Sound Quality: 85%

0 - - - - - - - - 100

## PVA

### Blush

*Ninja Tune ZENCD286; LP: ZEN286*

The debut album by the South London trio is an exciting hybrid that allies the power of monolithic synths and electronics to the drive and energy of Louis Satchell's super-tight drums. Josh Baxter sings on 'The Individual' with its whomping beats sounding like Acid House with disco drumming, but vocals are mostly handled by Ella Harris. Her casually declaimed lyrics over sequencers on 'Hero Man' invite comparisons with Factory Floor and their bass lines evoke New Order. PVA's sound is complex and multi-layered. On 'Transit', cool vocal melodies and piano notes hang in the air then are swept away by seesaw bass chords and syncopated drums. *MB*

Sound Quality: 80%

0 - - - - - - - - 100

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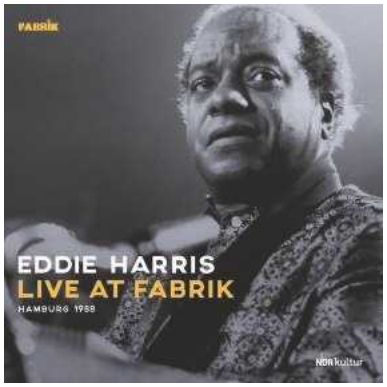


## EDDIE HARRIS

### Live At Fabrik: Hamburg 1988

*Jazzline D77106 [2 discs]; LP: D78106 [2 discs]*

Back in 1967, the Chicago-born saxophonist and pioneer of the Varitone horn pick-up had a hit with *The Electrifying Eddie Harris*. And then in 1969 he had an unexpected success with *Swiss Movement*, a live and allegedly unrehearsed Montreux festival set featuring pianist Les McCann and trumpeter Benny Bailey. At Hamburg's Fabrik club in 1988, Harris was still purveying R 'n' B-soaked funky soul jazz but also letting loose vocally with long tirades of African-inspired animal sounds. You can't help feeling that the front-man skills of McCann would have helped here, but to compensate there are long, tough, grooving solos from blues/rock guitarist Darryl Thompson. *SH*

Sound Quality: 75%

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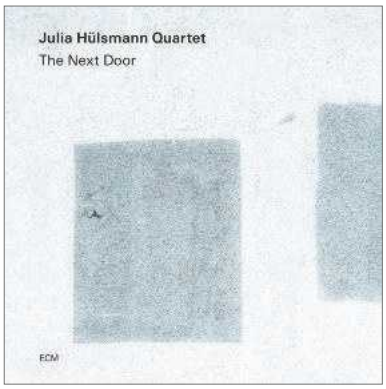


## JULIA HÜLSMANN QUARTET

### The Next Door

*ECM 4807370*

For the German pianist's *Not Far From Here* the great saxophonist Uli Kempendorff joined bassist Marc Muellbauer and drummer Heinrich Köbberlin, both then with her for more than a decade, to complete the sublimely integrated quartet heard again here. As Hülsmann put it, 'This is not trio plus guest'. All but one of the pieces are originals by band members and most are short, engaging yet satisfyingly intricate, as the band draws on the cool and modal jazz heritage to create its own zone of refinement. And when Hülsmann gives an occasional hint of *Kind Of Blue*, it's not a superficial whim, but springs from the deepest musical understanding. *SH*

Sound Quality: 90%

0 - - - - - - - - 100

## CHARLES LLOYD

### Trios: Sacred Thread

*Blue Note 4526687; LP: 4533317*

After recruiting Bill Frisell and Thomas Morgan for *Chapel*, Lloyd chose guitarist Anthony Wilson and pianist Gerald Clayton for *Ocean*. But now comes the final episode in the veteran saxophonist's 'trio of trios'. When Lloyd first played with Zakir Hussain in 2001, he realised that he'd seen the percussionist's father Alla Rakha performing with Ravi Shankar, decades earlier: 'You could call it Providence, I call it a Sacred Thread', he says. I have to say that *Ocean* is still my favourite. But with a sympathetic Julian Lage on guitar, *Sacred Thread* once more reveals the spirituality and truth of Lloyd's music, no matter how many or how few notes he plays. *SH*

Sound Quality: 85%

0 - - - - - - - - 100

## RAPH CLARKSON'S DISSOLUTE SOCIETY

### This Is How We Grow

*Migu Records MGU001*

**Trombonist and composer Raph Clarkson has been involved in many classical educational projects as well as jazz and experimental music groups including Dissolute Society. As with its 2018 album *Soldiering On*, the band is a 'super conglomerate' built around trumpeter Laura Jurd, Phil Merriman on keys, drummer Simon Roth and vocalist Fini Bearman. Guests include guitarist John Parricelli and saxophonist Mark Lockheart, and there's even a string section. But what's really special is the way that every track features a group of children's voices, from various schools and from years 3 to 6. Subtly fronted by Bearman, they sing their hearts out and, if you believe in music education at all, they will warm your heart too. *SH***

Sound Quality: 90%

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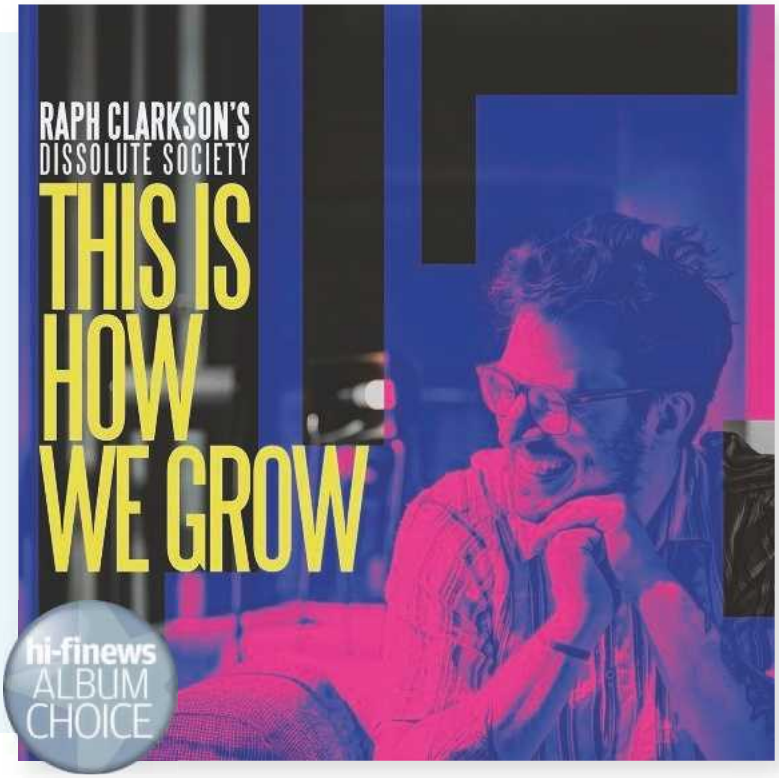

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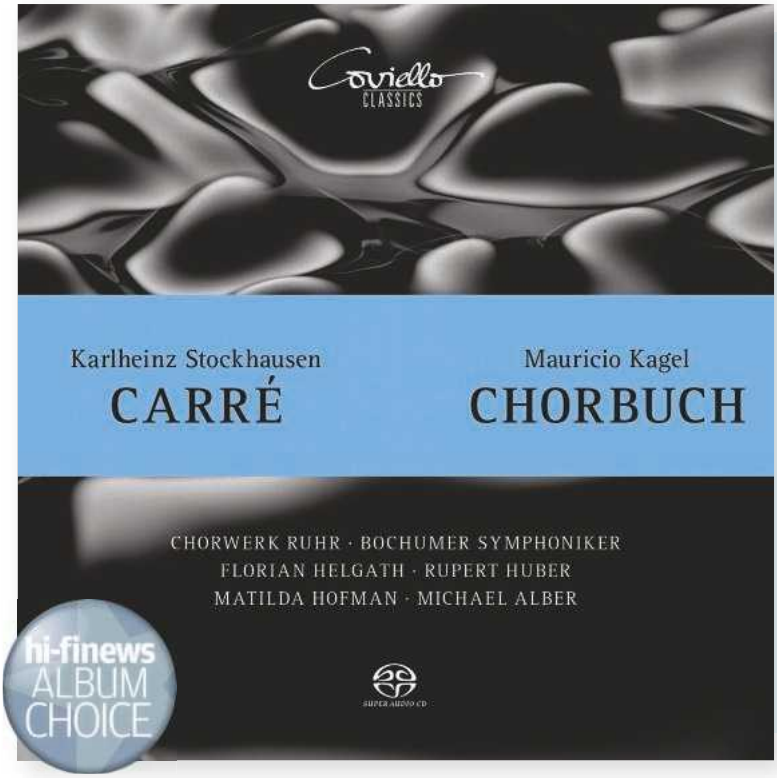


## CHORWERK RUHR, BOCHUM SO/HUBER, HELGATH, HOFMAN, ALBER

SA

**Stockhausen: Carré/Kagel: Chorbuch**

*Coviello COV92113 (SACD)*

**_Carré_ has always suffered from being the B side, literally (on an old DG LP) and figuratively, of the triple-orchestra showpiece _Gruppen_. The spatial theatre of being surrounded by four choirs and orchestras is inevitably flattened by two-channel reproduction, but the piece builds its own enthralling momentum through a mostly gradual rate of change, endlessly varied textures and sudden flurries. Stockhausen likened _Carré_ to hearing the steady tick of a jet engine, and there is a thrilling sense of an aural map being unfurled at simultaneously slow and high speeds. Kagel's irreverent take on Bach chorales is good fun, too, and performances are immaculately prepared and engineered. _PQ_**

Sound Quality: 90%

0 - - - - - - - - 100

CD

## TALICH QUARTET

**Dvorak: 'American' Quartet, 8 Waltzes Op 54, _etc_**

*La Dolce Volta LDV101 (downloads to 96kHz/24-bit resolution)*

However many 'American' quartets the Talich has recorded in its 60-year history, I fancy few of them rank with this one. Violist Radim Sedmidubský brings a joyous spring to the opening melody that feels like a hug from a long-absent friend. As grandson of the quartet's founder-leader, Jan Talich Jr leans into the sad song of (ii) with old-school, high-intensity vibrato, while cellist Michal Kaňka brings his own decades of experience to bear on the Schubertian bass. Both fillers have rarity value. An abandoned *Allegro* from 1880 quotes a Weber aria within a tightly worked form; originally written for piano, the *Waltzes* evoke a bygone charm in modern transcriptions. *PQ*

Sound Quality: 90%

0 - - - - - - - - 100

CD

## QUATUOR HERMÈS, KADOUCH, LUZZATI, _ET AL_

**Sohy: Orchestral, chamber and piano music**

*La Boîte à Pépites BAP01.03 (downloads to 96kHz/24-bit resolution)*

A new label dedicated to reviving the work of unknown women composers launches with a set dedicated to the music of Charlotte Sohy (1887-1955). The tugging harmony of *Trois Chants Nostalgiques* (1910) shows that Sohy knew her Wagner, and how to handle it, but the string-orchestra *Histoire Sentimentale* (1952) also belongs to its own complicated time. Sohy grew up in wealth, learnt her music at the bench of a Cavaillé-Coll (at home!) and studied with Mel Bonis, Vierne and Roussel before marrying and bearing seven children. Two substantial string quartets attest to her technique. Sohy is done proud here. *PQ*

Sound Quality: 90%

0 - - - - - - - - 100

CD

## ANNA FEDOROVA, ORCH ST GALLEN/ MODESTAS PITRĖNAS

**Rachmaninov: Piano Concertos Nos 2 & 4**

*Channel Classics CCS42522 (downloads to 96kHz/24-bit resolution)*

Fedorova's star rose this summer as soloist with the Ukrainian Freedom Orchestra. Her Fourth makes an appealing contrast to the classic Michelangeli [Warner], underlining its unsettled, Prokofiev-like ambivalence – even Bartók comes to mind in the central nocturne. There is plenty of authentic muscle both to her left-hand bass and to the engineering, though older listeners may hear an echo of Ansermet's OSR in the transparency of the St Gallen ensemble. Even No 2 sheds some of its maudlin weight, not by turning on the speed but through rapturous phrasing in (ii), and a surging freedom in (i) and (iii). *PQ*

Sound Quality: 85%

0 - - - - - - - - 100

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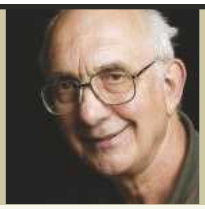

Barry Fox
Technology journalist
Barry Fox trained in electronics with the RAF and worked as a patent agent, but he gave that up to enter journalism. He is one of the world's top technology writers

# Long-lost conversation

**Barry Fox** once learned a lot from British composer and session player Steve Gray about the battle between synthesisers and musicians – and now he's unearthed Gray's original letter

On a trip to Japan long ago, to tour factories making hi-fi for the UK, the first thing we journos did when we got a few hours to ourselves was hit the wonderful record stores and buy far too many LPs. And the LP we most wanted was *The Planets*, played by synth pioneer Isao Tomita. Imogen Holst still controlled the way her father's music could be sold, but legal loopholes left her with no sway over the Japanese market...

## SETTING ME STRAIGHT

Nothing divides the music and audio world quite as firmly as the use of synths to mimic the sound of strings, and other orchestral instruments. So much so, that around 30 years ago the Musicians Union (MU) tried to control synthesiser use.

When I wrote about this in the distant past I heard from one of the UK's finest arrangers and keyboard players, the late Steve Gray, who also spent years with the crossover band Sky. Steve set me straight on some basic misconceptions, and I recently transcribed his words.

'I am currently exercising my brain over the Musicians Union versus synthesists. It is now possible to buy a string synth for less than it costs to book strings on a session. So what does the Musicians Union mean when it says it only objects to synths replacing musicians who might reasonably expect to be booked?

**ABOVE: Tokyo-born Isao Tomita, one of the pioneers of electronic music, in 1977**

'The whole shemozzle began when Barry Manilow toured the UK, and instead of his traditional large orchestra, he used a rhythm section and three or four synths. Someone argued that Manilow has sufficient money to employ an orchestra, if he feels like it, and he used synths for sensible musical reasons and little else. [But] I've had enough experience with big American names to know that money is always a consideration.'

Steve continued, even supplying me with 'a bit of background' on synths and samplers. 'Most synths can use samples as the basic waveform and all samplers have synth-style control functions to shape the raw sound. The main difference is that a sampler will let you import anything, be it a piano, a flute, or the LSO, as the basic sound building block. The better the sampler, the wider and more wonderful the things you can then do.

'Some synths will import samples as well. So the functions of synths and samplers are to reproduce or recreate existing sounds, and to create new non-natural sounds, with a sampler's emphasis more to the former, and the synth a mixture of the two.' Synth sounds, Steve explained, are altered by 'the nature of the shape and type of filters and envelopes applied to them. Samplers generally don't come with presets but synths always do. As the job of presets is to sell the instrument to players who don't want to do their own programming, they are always excellent'.

> 'A sampler will let you import a piano, a flute or the LSO'

Probably the most famous preset, he said, was Digital Native Dance from the Roland D-50, 'created back in the mid-'80s by mistake'. This, he told me, went straight out of the box and onto a Michael Jackson track. Then there were synthesisers with a Theremin sound. 'I've never even seen a Theremin. No one is listed as playing the instrument in the Musicians Union directory. Given that Preset 147 on E-mu's Vintage Keys model is a very convincing simulation, I'm not likely to need one.'

**ABOVE: Steve Gray (centre) pictured on the cover of *Sky 4: Forthcoming*, released in 1982**

## KING OF THE KEY CHANGE

As well as this appreciation of what synths could do, Steve argued that there will always be a need for human creative thinking and writing. 'The human mind craves refreshment and novelty. A key change is a cheap and easy way of achieving this. For me the best [one] in music is at the end of Ravel's 'Bolero'. After he's been rattling on in C major for 16 minutes, he suddenly swerves for eight bars into E. It's like having a bucket of water thrown over you in the desert.'

A quarter of a century on, could modern Artificial Intelligence be clever enough to create a comparable music surprise? Who would have thought then that I could now be digitising Steve's faint faxed handwriting just by reading the words to a Pixel phone? I dearly wish Steve were still around to ask.

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Barry Willis
**Journalist for top American audio-video publications**
While his main interest is high-end audio, Barry Willis also writes about the culinary industry, visual art and theatre for a huge variety of US newspapers and magazines

# Keep the change?

Adding extras to a hi-fi set-up to improve the sound is a key part of the audiophile hobby, says **Barry Willis**, but remember that you're seeking musical satisfaction, not just 'a difference'

Audiophiles begin life as music lovers. What distinguishes the two is that audiophiles care about differences between audio components. Music lovers may hear differences, too, but don't care as long as they can enjoy the music – a state of innocence that many audiophiles hope to revisit through endless component upgrades and constant cable-swapping.

A fascination with sonic differences is the larval stage of audiophilia, one we all pass through on our way to technophile adulthood. It's also a stage where many of us get stuck – hobbyists and professionals alike. At trade shows, I've often asked purveyors of mysterious, incomprehensible devices what their products do. 'Change sound', was almost always the chirpy English-as-a-second-language reply, as if a change were all the justification needed to report on, recommend, or buy such products.

## WHO NEEDS FRIENDS?

Reality check: everything in an audio system, and in the room where it resides, has a sonic effect. Bring a friend into your listening space, and you've altered the acoustic character of your room. Move your loudspeakers and you've altered the soundstage. It's a compelling phenomenon – everything has 'a sonic signature' that contributes to the overall sound. So the question we should ask immediately after 'What changed?' is 'Was it an improvement?'

> 'Everything in an audio system has a sonic effect'

Improving musical performance should be the driving force behind add-ons and upgrades. Products that yield minor cosmetic sonic changes shouldn't be endorsed simply because they have some perceptible effects. The bottom line should be whether or not any change renders more musical satisfaction, a purely subjective evaluation.

**RIGHT: Trying to ascertain whether a tweak has yielded a beneficial change? Try removing it from your audio system, suggests Barry Willis**

JULIA SHAUERMAN / SHUTTERSTOCK.COM

Like most readers of *Hi-Fi News*, you probably have an audio system that's continually evolving. You've abandoned cheapie generic cabling and moved to high-performance interconnects and speaker wires. You may have clamped noise suppressors around mains cables, draped your speaker wires on little trestles, or placed around the room any of what I call 'ceremonial listening devices', objects whose presence is claimed to enhance the musical experience.

No doubt, you've added all these one-at-a-time and noticed a difference each time. But did you take the next step and determine whether or not the change was beneficial? Did it enhance your musical satisfaction? Asking such questions is absolutely essential if you want to keep your sanity, avoid bankruptcy, and continue to enjoy recorded music.

Perhaps a better way of evaluating devices whose stated purpose is to 'change sound' is to remove them one-by-one and see if their absence causes perceptible sonic deterioration. If not, or if you're not sure, then you have your answer. Remove your fancy interconnects from preamp to power amp and replace them with generics. Did the soundstage collapse or is it still stable? Play a favourite track from a favourite CD, then take the exotic hardwood feet out from under your disc player and let it rest on its little factory-installed rubber nubs. Play the track again – worse, better, or inconclusive? Just for fun, swap out your ultra-costly speaker cables with lengths of heavy-gauge lamp cord. Again: worse, better, or inconclusive?

## ON ONE CONDITION

You might also be amazed that removing tweaks from your system can actually yield improvements. In my last house, I was living with a quarter-million-dollar system. In it was a huge power conditioner that the manufacturer swore would eliminate every last bit of noise – except that it didn't, until I removed it. Another system had costly speaker cables that I replaced with generic wire from the hardware store to make for a better-looking installation. Result: some slight reduction of microdynamics, but nothing that anyone noticed – not even audiophile pals who were familiar with its sound. It didn't bother me.

Many will crow about sonic differences as revelations, but if they don't equate to clear improvements in sound, they don't really amount to much.

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Jim Lesurf
Science Journalist
Jim Lesurf has spent a lifetime in audio, both as an engineer at UK hi-fi company Armstrong and reader in Physics and Electronics at St Andrew's University

# Savouring the classics

This month **Jim Lesurf** reports on two societies that are preserving, and sometimes reimagining, the work of two of his musical heroes – Sir John Barbirolli and Ralph Vaughan Williams

I've been a member of the Sir John Barbirolli Society for decades. Indeed, I built its first website to enable its existence and activities to become more widely known – and so perhaps help maintain public awareness of Barbirolli's excellence as a conductor and musician.

Decades ago only a small selection of his recordings had been re-released on CDs. This was frustrating for those of us who loved his conducting, and a great shame because it denied new listeners the chance to hear what was buried in the vaults of the then-EMI company.

It also meant the skill and passion of the musicians in the Halle Orchestra during his period were being overlooked. More than once I felt that EMI simply wanted to 'bury' most of these recordings so as to avoid them 'competing' with other versions of the same works.

**ABOVE: The Ralph Vaughan Williams Society at *www.rvwsociety.com*, which celebrated the composer's 150th anniversary this year, and (right) Sir John Barbirolli recording at Abbey Road**

## SILVER SERVICE

Fortunately, by patience and persistence, the society gradually helped to transform the situation. Over the decades more and more of the old recordings were released on silver disc. And this process reached its peak when a full boxset of over 100 CDs was issued just a year or so ago. A set that – at last! – included many carefully remastered works that had never before appeared on CD. In addition, the society kept finding other recordings from concerts and broadcasts that had not been heard since they were broadcast. These, too, have now been released. So, overall, Barbirolli's work is now more accessible than it had been for many decades.

> 'A new brass band version really blows the dust off'

I've also always been moved by the work of Ralph Vaughan Williams. Maybe because it is based on 'folk' music; maybe due to hearing so many hymn tunes when at school. Whatever the reason, hearing a Vaughan Williams piece often forces me to stop whatever I'm doing and become captured by its emotional impact.

Despite this, I have only recently joined the Ralph Vaughan Williams Society, after hearing a snippet of one of its Albion Records releases and discovering a work I'd never encountered before. The main reason the society exists is the same one that saw the Barbirolli Society founded – love of the music. It also issues CDs, but differs because the focus is on the work of a composer rather than a performer, so the Ralph Vaughan Williams Society produces fresh recordings on CD (and download file) of the works.

## SHINE A LIGHT

For these new performances the society can exploit the advantages of modern recording methods, achieving technically superb sound quality of a kind that could only have been dreamed of during the decades when Barbirolli was conducting or Vaughan Williams was alive. It also produces new versions of works that cast a fresh light, a stunning recent example being a CD of pieces transcribed for brass band. I've always enjoyed the old Barbirolli-conducted performance of Vaughan Williams' *Tuba Concerto* (Halle Orchestra with Tuba: Peter Catelinet, recorded in the 1950s in mono). But the society's new brass band version really blows the dust off this and delivers a superbly warm, rich, golden sound!

## WONDERFUL WORK

Looking though its catalogue online I found various other works given a new recording, or rediscovered after being largely forgotten – and sometimes transformed in the process in a way I think would delight the composer. So it's well worth exploring and enjoying.

Both the Barbirolli and Vaughan Williams societies have done wonderful work, but under different limitations set by the nature of their purpose – for example, the latter organisation is free from being limited to examples recorded decades ago. We, fortunately, can enjoy the results from both of them.

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Adam Smith
Hi-fi reviewer
Electronics engineer, music lover and former loudspeaker designer, Adam Smith is known to dabble with all audio formats, but is a committed vinyl fan at heart

# Welcome to the jumble

**Adam Smith**, fresh from a successful trip to the latest Audiojumble, believes there's never been a better time to be a vintage hi-fi enthusiast – although Mrs Smith might disagree

October marks the autumnal occurrence of the magnificent twice-yearly Audiojumble in Tonbridge [*HFN* Nov '22]. First instigated over 30 years ago by vintage audio guru John Howes, and now in the capable organisational hands of his children, Catherine, Michael and Richard, the event is a must if you love old audio.

Like fellow *Hi-Fi News* scribe Ken Kessler, I am a regular at the gathering and have been for over 20 years. I first went to the Audiojumble as a visitor but, when it became obvious that I was rather too partial to the bargains on offer, I started taking a stall at each event in order to thin out the Smith collection and re-home the 'Blue Cross' hi-fi that seems to find me during the year.

## VARIETY SHOW

Due to the pandemic the October event was the first since February 2020 and its return was hugely welcome – especially as I missed the last one. This was because my route was effectively turned into a river thanks to major flooding caused by the storms and torrential rain that battered the south coast the night before.

Turnout at the latest Audiojumble was excellent, showing that interest in vintage audio shows no sign of declining.

**ABOVE: *HFN* reviewer Tim Jarman with vintage Sony kit at the 2017 Hi-Fi Show *Live***

**RIGHT: Now in its 28th year, the Audiojumble is held at the Angel Centre in Tonbridge, Kent and bills itself as the largest secondhand and vintage hi-fi event in the UK. For more see *www.audiojumble.co.uk***

Visitors to the Hi-Fi Show *Live* over the years will have enjoyed a variety show of vintage delights demonstrated by *HFN* reviewer Tim Jarman, and he tells me the fascination with the 'old timers' has never been stronger. One aspect of the vintage scene that delights me is the way enthusiasts are happy to mix and match old with new. There are no rules – you don't have to have all new or all vintage and there is great fun to be had in combining the two to pleasing effect. When I'm not reviewing I run several vintage sources through my modern amplifiers and loudspeakers, and also have a fair number of vintage speakers I like to wheel out every now and then.

> 'Enthusiasts are happy to mix and match old with new'

I've been collecting vintage equipment since my teens. Driving past a field on the outskirts of Southampton in the family car one Sunday morning, I asked my parents what event it was that I could see taking place. It turned out to be a car boot sale and I knew I had to check it out. My father said there was no way he was getting up at silly o'clock to take me, so I said I'd walk. He did say he'd pick me up though. Given that my very first trip resulted in two turntables, a big receiver and a pair of speakers for the grand sum of £12, I think he regretted that. There was a definite sense of relief a few years later when I learned to drive and he could enjoy his Sunday lie-ins once more!

## LOFT CONVERSION

Car boot sales aren't what they were for us audio fans, the interesting equipment from vintage hi-fi's heyday having seemingly found its way out of lofts years ago. In addition, stringent WEEE regulations mean you can't buy electricals at your local Household Waste Recycling Centre anymore, so events such as the Vintage Showcase at the Hi-Fi Show *Live* really are the best ways of seeing these components up close and in person.

As to the recent Audiojumble, I had a good sale and the car came back lighter, plus I only bought one turntable (a Linn Basik) and one pair of speakers in the form of some Naim SBLs needing new tweeters. Well, strictly speaking, two new turntables came home with me but, as the second was a deal struck on an online forum the week before and all I did was collect it from the seller at the event, I'm telling myself it doesn't count…

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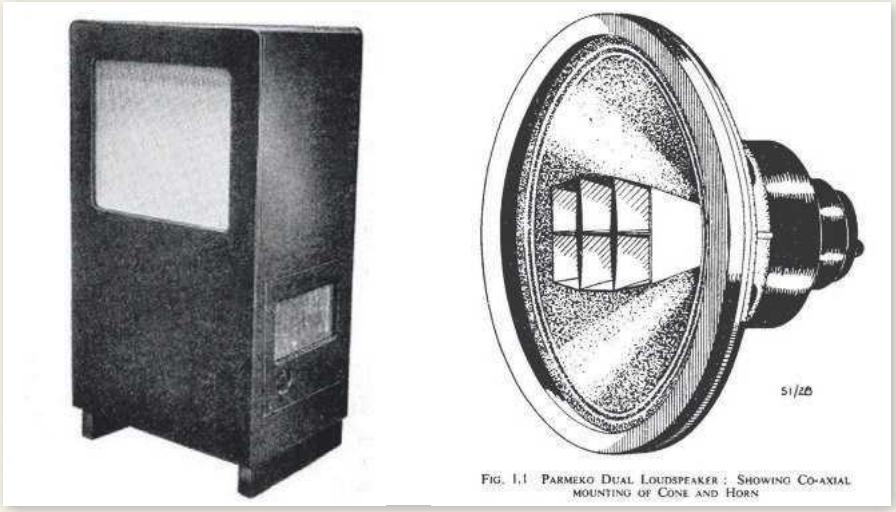
Steve Harris
Contributor
Steve Harris edited *Hi-Fi News* between 1986 and 2005. He loves jazz, blues music, vinyl and vintage hi-fi and anything that makes good music come to life

# From paper to polyprop

As the BBC celebrates its centenary this year, **Steve Harris** recounts the development of the corporation's mighty LSU/10 loudspeaker, a project that would end up taking over 30 years

You're probably reading this at a time quite close to the true centenary of broadcasting in the UK, as the BBC began its regular daily radio transmissions on the 14th of November 1922. So maybe it's a moment to look back at the historical aspect that will be of most interest to audiophiles – the BBC loudspeaker story.

Before World War II, the BBC relied on Rice-Kellogg drive units, built into open-backed cabinets and designated LSU/7. But after the war the BBC simply had to develop its own designs. To read all about this subject online, start with broadcast engineer Mark Hennessy's 'BBC and Rogers Loudspeakers' pages at *www.markhennessy.co.uk*. From there you can link to an excellent and informative article by Alan Shaw of Harbeth.




**ABOVE: The BBC LSU/10 used a 15in Parmeko bass unit (right) with concentric horn treble unit, driven by a Leak or Sound Sales amp. A Lorenz LPH65 tweeter was added later to extend treble**

## START SPREADING THE NEWS

Shaw pays tribute to the contribution of H L Kirke, appointed Senior Development Engineer in 1924, named Head of Research Department in 1930, and holder of that post for 20 years. Shaw tells us that in 1944, Kirke sailed to New York to see 'the new VHF/FM radio service in action and progress in television transmission'. He claims it's likely Kirke was made aware on this trip of development at CBS Labs on the modern LP record, and anticipated that the British audience would shortly follow American technology and entertainment trends.

'Some time between 1945 and 1947 Kirke authorised BBC research engineers to start work on a replacement for the LSU/7 monitor... [they] started by canvassing the speaker industry for a suitable wide-band driver.

'The next step was to verify its sonic and technical potential and wide bandwidth. The final step would be to approve its fitting to the new monitor cabinet. The final assembly would eventually be known as the LSU/10.'

> 'By the '60s it seemed plastic cones would be the answer'

Those engineers were D E L Shorter and H D (Dudley) Harwood. Many commercial drive units were tested and found wanting. Although the Parmeko 15in unit was selected for the LSU/10, in reality it was found to vary wildly in response from sample to sample. In the end, as Shaw says: 'The speaker investigation project was to become a greater challenge than even the new television system, and it ran for over 30 years'.

Paper cone materials couldn't provide the consistent performance the BBC needed for monitoring, and by the 1960s it seemed that plastic cones would be the answer. But Bextrene, a form of polystyrene, still needed to be coated ('doped') by hand with a damping compound. Then, in the 1970s, came polypropylene, a softer material which didn't need doping. Having started working with this while at the BBC, Dudley Harwood left to set up Harbeth.

## PUTTING THE 'SNAP' BACK

Polypropylene was not a final answer, though. Years ago I was sitting with a well-known speaker designer listening to a pair of polyprop-coned speakers. 'They don't do *that*!' he said, snapping his fingers as he spoke. Many companies have worked to put that 'snap' back into the sound of polypropylene, not least Harbeth, whose RADIAL material was developed by researching the properties of dozens of polymer materials and creating a special blend, which ultimately dictated a switch from vacuum-forming to injection moulding.

To return to the BBC history, Mark Hennessy's website not only gives a fairly complete listing and description of all the BBC speaker models, it also lists and provides links to all the relevant BBC design reports, available (along with papers on many other subjects) from the BBC website. It's a treasure trove!

# Sound Off!

Send in your views to:
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## TURNTABLE CHALLENGE

### WHICH BUDGET AUTOMATIC DECK IS BETTER?

My sincere thanks to Paul Miller and Ken Kessler for their review of Pro-Ject Audio's Automat A1 turntable [*HFN* May '22]. My old Sony recently bit the dust, so I'd begun looking for a replacement that would also bring a step up in performance. However, I've always loved the PS-FL7's automation features and, because I didn't want to give them up, was having trouble finding good candidates.

As you know, there are not many good turntables available that also have automatic features – at least none that seem affordable. So I was very interested when I heard about the new Automat A1. Yet I couldn't find much information about it online that I was sure hadn't simply come from Pro-Ject's promotional literature. Finding your thorough review helped convince me that it really could be a good choice.

However (and perhaps because the Pro-Ject A1 is so new), most articles I've found that name a 'Best Automatic Turntable' seem to settle on the Denon DP-300F. I wasn't certain why, though none of these lists include any reference at all to the A1. By the same token, returning to *HFN* I couldn't find a review – or any mention – of the DP-300F. Do you have any comparative insight about these

**ABOVE: The Automat A1 is shipped with an Ortofon OM10 MM cartridge**

two turntables that might be of help to me? They differ little in price, so that's not an issue.

*Paul Dalton, via email*

Paul Miller replies: We are never short of great turntables to feature in *Hi-Fi News* so when dipping our toes into the potentially contentious arena of 'fully automatics' we've erred in favour of the vinyl-spinning specialists, including Pro-Ject with its A1 and, at a higher price, Thorens with its fine TD 148A [*HFN* Apr '21]. Denon's 'Anniversary' DL-A110 MC [*HFN* Mar '21] featured first in *HFN* but its DP-300F deck has never crossed our path – but perhaps that will now change as part of our 'Budget Esoterica' series! In the meantime, there are aftermarket auto-lifts available to bring a little automation to purist manual arms...

**ABOVE: Pro-Ject Audio's fully-automatic Automat A1 turntable package**

## In praise of PMC

### COMPANY SEALS SUBWOOFER DEAL WITH DIFFERENT BRAND

I want to thank Ken Kessler for his comprehensive reply to my question in the October '22 Sound Off pages concerning subwoofer integration. While PMC does produce subwoofers that would undoubtedly be a match for my twenty.21 speakers [*HFN* Apr '12], they are a bit beyond my budget and much too big. So, I dipped my toe into the subwoofer world with a BK XLS200MkII.

Like my speakers, this uses doped paper/fibre cones, so at least in that respect there is a basic level of compatibility. I took the plunge following an email to PMC asking about the benefits of using a sub with the twenty.21s. Within minutes of sending the message my phone rang and, to my delight, it was an engineer from PMC! We talked and I was convinced. I went ahead and bought the BK model, which has proved to be really good. Full marks for PMC – a discussion that I understood and with no sales pressure!

*Denis Holliday, via email*

Ken Kessler replies: Further to Mr Rowsell's query [see p113] about ESLs, another coincidence: the sub I will try with my Quad ESL-63s is a PMC, but am not yet sure which. I am fortunate in that PMC's Pete Thomas doesn't live a million miles from me, so he'll be tasked with integrating his sub with the '63s. Watch this space.

## WhitWorld

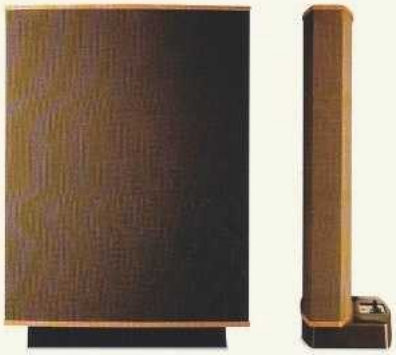
### OUR HI-FI WORLD THROUGH THE EYES OF WHITWORTH

# Speakers on a £10k budget

**SEEKING ELECTROSTATICS WITH ALL-ROUND SOUND TO MATCH MY QUAD FRONT-END**

Many years ago, while living in a small London town house, I purchased a wonderful speaker system from audio consultant Thomas Heinitz. It comprised a pair of Rogers LS3/5A speakers and an AudioPro subwoofer. The speakers served me very well for several years until a house upgrade gave me room to install Quad ESL-63s with the woofer. I loved the sound of the '63s when using a Quad front-end but, unfortunately, following yet another house move these also had to go.

To cut a long story short, after I extended a reception room at my current house, I once again had the opportunity of accommodating a pair of Quad ESLs – although this time a pair of 2905s. Sadly, my extensive taste in music, from rock at appropriate SPLs to classical and folk, seems to preclude their use as an all-round speaker solution.



**ABOVE: The Quad ESL-63 was launched in 1981 as a replacement for the ESL-57**

This means I am now looking for more conventional speakers with which to replace them, but I will miss the absolute transparency of electrostatic transducers. Does Ken Kessler, or other members of the *HFN* team, have a recommendation as to which electrostatic speaker might give me the sound I want with a Quad front-end? I'm willing to consider any products, with or without a sub, and have a maximum budget of £10k.

*Steve Rowsell, via email*

**ABOVE: MartinLogan's ElectroMotion ESL X hybrid speaker costs £4995 per pair**

Ken Kessler replies: What timing! I've just fired up my Quad ESL-63s and fallen in love with them all over again. My room is only 12x18ft so they're not asked to blast out, but I will be trying a subwoofer soon and will report back. I drive them with the Audio Research REF75SE power amp.

This gave rise to two solutions for Mr Rowsell. The first is to consider MartinLogan electrostatics in his price range, such as the ElectroMotion ESL X [*HFN* Nov '21], as this company has been (in my experience) the most successful in marrying ESLs with moving-coil woofers.

But here's a radical alternative: mint Quad ESL-63s are all over eBay for £500-£1000 per pair. I'd buy two pairs, set them up with two per channel as in Alastair Robertson-Aikman's set-up for the SME Music Room back in the day, one pair firing forward and one of each aimed at the sides. And there would be plenty left over for two powered subs if desired.

JITTERBUG
USB Filter

**Can a £39 insect make all your CD files sound better than Hi-Res?**

Yes and no: Using the same equipment and a quality DAC, a 24/96 file (for example) will always sound better than a CD 16/44.1 file … but, even a single JitterBug will often allow a CD file to be more musical and more emotionally stimulating than a Hi-Res file without the benefit of a JitterBug.

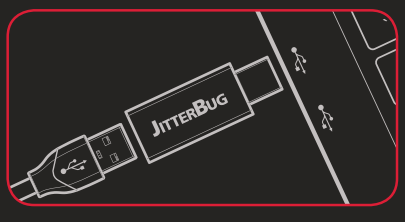
**Noise** is the problem. Real noise—the kind you can't hear directly. Most often, the word "noise" is used to describe tape hiss or a scratch on a record, but these sounds aren't noise; they are properly reproduced sounds that we wish weren't there.

**Problem noise** is essentially random, resonant or parasitic energy, which has no meaning. It can't be turned into discrete sounds, but it does compromise signal integrity and the performance of everything it touches.

**JitterBug's dual-function** line-conditioning circuitry greatly reduces the noise and ringing that plague *both* the data and power lines of USB ports, whether on a computer, streamer, home stereo or car audio front-panel USB input.

A single JitterBug is used in between devices (i.e., in series) as shown below. For an **additional "wow" experience,** try a second JitterBug into another USB port on the same device (such as a computer). Whether the second port is vacant, or is feeding a printer or charging a phone, JitterBug's noise-reduction ability is likely to surprise you. No, the printer won't be affected—only the audio!

While a JitterBug helps MP3s sound a lot more like music, high-sample-rate files have the most noise vulnerability. Try a JitterBug or two on all your equipment, but never more than two per USB bus. There is such a thing as too much of a good thing.

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ORIGIN LIVE

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- AV Audio Editor July 2021
ENTERPRISE REVIEW

You might be sceptical that a tonearm could tranform your system, but the editor of Av Audio found that the Enterprise Mk4 tonearm made more difference to his system than anything else. More difference than many other outstanding analogue products, including a world renowned £17,000 phono stage and £8000 cartridge.

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# A rather nice find!

**MY SWEET-SOUNDING DIY LOUDSPEAKERS, '70S STYLE**

I have recently acquired a pair of P Atkinson compact transmission-line speakers that were constructed from a design published in the Nov 1978 issue of *HFN*. Whoever built them did an excellent job. In fact I've seen commercial speakers of the same era that were less well put together.

The combination of the KEF B110 driver and Isophon KK8 tweeter works very well, giving an open midrange and a sweet treble. Meanwhile, the transmission-line loading delivers bass that is tight and subjectively deep. A rather nice find!

*Martyn Miles, via email*

A 'MINI-LINE' TRANSMISSION-LINE compact design by P Atkinson

**ABOVE: Plans for P Atkinson's 'Mini-Line' loudspeaker as published in *HFN* Nov '78**

Steve Harris replies: Readers who go back even further than me will remember that the Mini-Line of 1978 was a follow-up to Atkinson's big and impressive 'State of the Art' DIY transmission-line speaker design of 1976, which rather resembled the big IMF's of that era. As others have done since, he set out to get the transmission line principle to work in the smallest possible cabinet. The dimensions are 442x213x250mm (hwd), which in those days I think would have made it a 'large bookshelf'.

He chose a novel and, at the time, fairly economical form of construction. The double-skinned main cabinet was made from two thicknesses glued together. But the panels forming the maze-like labyrinth inside – creating the long folded 'transmission line' duct, along which the rear sound output of the speaker has to travel before what's left of it reaches the exit port – were just single 6mm sheets. This gave a saving in weight, which incidentally had also been a major consideration when the BBC adopted thin-walled birch ply cabinets a few years earlier. Atkinson decided that with this small speaker there was no need for absorbent material inside the 'line' and used a slightly modified version of Isophon's crossover, and it all seems to have worked very well.

**ABOVE: Reader Martyn's 'Mini-Line' speakers with their double-skinned main enclosures**

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# Untangling the technicalities of streaming

**READER SAYS *HFN* REVIEW OF AURALIC'S NETWORK-ATTACHED STACK REVEALS HOW COMPLEX STREAMED MUSIC HAS BECOME**

**ABOVE: The Auralic Aries G2.1 is a network-attached music library/digital server aimed at those who already use a high-quality DAC in their system but are looking to add extensive network audio capability**

I found Andrew Everard's review of the Auralic Vega G2.1 upsampler and Sirius G2.1 DAC [*HFN* Oct '22] disappointing for a number of reasons. Firstly, this is rather an eccentric combination of components to have been used together without an additional streamer, such as Auralic's Aries G2.1 [*HFN* Feb '21], also in the system. As stated in the review, the addition of the Sirius upscaler will have no effect on network-streamed music. If all your music is held on a NAS or a USB device then this would certainly be a reasonable combination of components, but the benefits of the upscaler will be applied to network-streamed music if the Sirius sits between an Aries and a Vega.

The equalisation and room correction features of the Sirius are duplicated on the Aries, so they are not in themselves a reason to buy the Sirius. I bought a Vega G2.1 myself and, as stated in the review, it is a very effective streaming device in its own right. However, when my dealer loaned me an Aries G2.1 streamer, there was a substantial increase in sound quality. Instruments and voices were positioned more distinctly within the soundstage, and instrumental timbre was improved. Therefore, I do not agree that if you're purely committed to network streaming then the Vega alone will more than suffice. I think the review should have pointed out that further improvements in sound quality are available with the addition of a streamer.

Finally, it is stated in the review that the Lightning Link design uses a modified version of the HDMI connector, which means that you can't use generic AV-type cables but instead must employ the cables supplied with Lightning-compatible Auralic products. I bought an AudioQuest Thunderbird 48 HDMI cable and not only does this function perfectly between my Aries and my Vega, but it also provides a noticeable improvement in sound quality. In fact, I believe that Auralic itself recommends the use of AudioQuest HDMI cables.

Streaming is becoming a very complex area technically, and is made more complex and more confusing in this case by the fact that functions such as streaming and equalisation are provided by more than one of the components within the full Auralic stack. I feel that your review could have gone further in describing the capabilities of the full range of Auralic products.

*John Eales, via email*

**ABOVE: Auralic describes its Vega G2.1 (bottom) as a 'performance-focused DAC' and the Sirius G2.1 (top) as an 'upsampling processor', both products being synchronised via the brand's L-Link**

Andrew Everard replies: I agree that the combination of products in this review was somewhat unusual, but that was the pairing supplied by Auralic Europe. We endeavoured to cover these latest G2.1 offerings fully aware that there was some 'duplication of effort' within the boxes. And yes, the relevance of this set-up, and the choice of components within the Auralic range, will be very much coloured by the way one accesses music.

In my own system, with most of my music held on NAS devices, either the Vega G2.1 alone, or *in extremis* a three-box – or even four-box – Auralic stack would be the way to go. However, the fact that the company ladles so many features into several of its products inevitably means there's some overlap.

Our review was intended to cover the two products supplied, not as an overview of the entire Auralic range as we'd already explored the Aries G2.1 streamer [*HFN* Feb '21]. This demonstrates the value of a specialist retailer in helping enthusiasts establish the various combinations of Auralic separates that best serve their needs.

On the subject of Auralic's Lightning Link connection, perhaps I slightly overstated the point about 'this may look like an HDMI connection but it's not there for conventional HDMI sources'. In fact, the manual for the Sirius G2.1 DAC explicitly says, 'Please only use Lightning Link with the cable that comes with our Processor and DAC'. At the time of our review I was unaware that Auralic or its agents were suggesting the use of third-party (AQ, in this instance) cables with its products.

# A vinyl unboxing

**DELIGHT OR DESPAIR AS DECADES-OLD PUCCINI LPS ARE PLAYED?**

Keith Guerrier's letter published in the October issue has inspired me to share my tale. Thirty-four years ago I purchased a vinyl box set of Puccini's *Manon Lescaut* from the JG Windows store in Newcastle. The artists were Kiri Te Kanawa and José Carreras, then both in their early 40s and at the height of their careers. Riccardo Chailly conducted the Orchestra e Coro del Teatro Comunale di Bologna. The young man serving asked if I would like the box sealed. As it was near Christmas, perhaps he thought it was a present for someone. I haven't the remotest idea why I agreed, but decided to say yes.

The set remained unopened in a cupboard until early August this year. I can't give you a reason for the precious black vinyl remaining in the dark until 2022, but I *can* tell you I was still very reluctant to break the seal. Why I wonder? Perhaps in the back of my mind I wondered if someone would pay handsomely for the pristine vinyl, or perhaps I was concerned that I would be disappointed given that the only vinyl I have bought in the last 15 years has been audiophile quality.

Would I be disappointed on playing the discs, or would I be delighted? First, I had forgotten how flimsy vinyl was in those days, but apart from a couple of clicks I thoroughly enjoyed the music yielded by the tiny grooves. Perhaps the way to go now is to purchase a record cleaning machine, and rediscover my now ancient collection of LPs.

*Revd David W Bond, via email*

**ABOVE: Puccini's *Manon Lescaut* box set with Kiri Te Kanawa [Decca 421 426-1]**

Peter Quantrill replies: Aside from enjoying the recording itself, the Revd Bond is better off hanging on to his Decca *Manon Lescaut*: LP copies are currently fetching a moderate £30. If he does investigate the rest of his collection, he should find that vinyl is a hardier format than he imagines. Provided the discs have been kept somewhere cool, dry and clean, the LPs should be good to play without his needing to invest in an expensive record cleaning machine.

# Hi-fi halls of fame

**ANY NEWS ON RUMOURS OF AUDIO MUSEUMS?**

It was good to see hints from Ken Kessler in the Mar '22 issue concerning the development of two audio museums – one for analogue in the EU and another in the UK. In Ken's words: 'There is the whisper of a planned, UK-based audio museum, so I have been shipping off as much of my archive as I can afford to part with, in full-to-the-brim Range Rover loads'.

At 75 I regard myself as getting on a bit and so have been planning for the future! I have collected pop music since the 1960s and have also been an avid collector of cassettes since 1973, amassing more than 3000 blanks. Now I am trying to find someone to take this collection over. Does Ken have any thoughts?

*Andrew Meakin-Scott, via email*

Ken Kessler replies: Unfortunately, I'm not authorised to steer people toward the pending museum, and they are already groaning from the volume of my contribution. If, however, there is a general appeal to readers, you will read it in *HFN*. In the meantime, the best way to dispense with tapes, hardware, *etc*, is eBay, or implore a relative or friend to take a couple of tables on your behalf at the Tonbridge Audiojumble [see p109].

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# Goodmans One Ten receiver

Handsome, affordable and boasting a top-notch tuner to boot, should this early '70s receiver top your list when it comes to securing a pre-cherished radio star? We find out

Review: **Tim Jarman** Lab: **Paul Miller**

Almost all audio enthusiasts will know Goodmans for its range of loudspeakers. However, the company's other hi-fi products are less well remembered, despite the fact that more than one or two achieved considerable popularity among buyers.

One example is the One Ten receiver we have here. Designed along European lines, it was launched in 1972 and came in two finishes: a natural aluminium fascia with black controls and a sleeve in teak, rosewood or walnut; or a black fascia with a white sleeve and a mix of white and multi-coloured controls. The latter version saw the colours of the waveband switches match the stripes on the tuning dial.

## THORN TO RUN

The One Ten drew on work Goodmans had undertaken in the decade or so before. With the Maxamp from 1963 it had become one of the first British manufacturers to bring a transistorised stereo amplifier to market, and this was later augmented by the Stereomax FM tuner. This compact pairing defined a style and format that would later be reprised by Sony with its TA-88/ST-88 [*HFN* Apr '12].

Being a combined stereo tuner and amplifier, the receiver was a key hi-fi product in the late 1960s and early '70s. The big European names were making the running as the Japanese companies marketing receivers were styling them for an American audience, which wasn't always to the taste of British consumers. On the other hand, models such as the B&O Beomaster 3000 and Braun Regie 510 [*HFN* Jun '16] were aspirational products that motivated many other firms to produce something similar.

Around this time Goodmans found itself under the wing of the vast Thorn organisation whose other brands included Ferguson, HMV, Ultra and Marconi. Thorn had tried to enter the market for top-end hi-fi previously, having taken control of Beam Echo/Avantic [*HFN* Dec '18] in the early 1960s. This venture sadly came at a time of crisis for the TV industry as the British government prematurely announced the ending of the 405-line system. This left Thorn and its competitors with warehouses full of TV sets the public no longer wanted to buy. Amid the chaos the Avantic project was quietly dumped, but a decade later the firm was ready for another try.

**ABOVE: An excellent FM tuner section was a key feature of the One Ten with Automatic Frequency Control ensuring drift-free reception**

Goodmans was given the full support of Thorn's electronics know-how and mass production expertise. The first fruits of this collaboration was an intriguing line of receivers that began in 1971 with the Module 80. This was a capable design having a power rating of 35W per channel into 4ohm, an FM tuner with full-band coverage, and a built-in stereo decoder.

## CABINET SHUFFLE

The One Ten arrived the following year boasting improved performance and a striking new cabinet design. In 1973 the Module 90 was launched – a 45W-per-channel model that took some of the One Ten's styling cues and went on to become the most successful member of the series.

A year later music centre versions of all three models were added to the lineup by increasing the depth of the cabinets and adding a turntable on the top. All were

**LEFT: Dual headphone sockets hidden behind a flap certainly look like a good idea, until you decide to put the receiver into a rack or cabinet. Overall finish is to a good standard, however**

generously specified, with even the basic Module 80 Compact gaining a Goldring Lenco GL75 deck. Moving up the range, the Module 90 Compact came with a Garrard Zero 100SB turntable [*HFN* Dec '16] while the One Ten Compact had a Goldring GL85 with a G800E pick-up and elliptical stylus.

It was at this point that Thorn's marketing machine went into overdrive. It took the Goodman's Module 90 and re-packaged it for its HMV and Ultra brands. The Ultras, typified by the model 6453, were available only in 'Bermuda white' and came with a matching pair of speakers to suit the most modern of interiors. The HMV units, on the other hand, were more traditional in their styling and came finished in teak. To add to the options available, both floorstanding console and table versions of the models were offered.

## SOMETHING SPECIAL

As with the Ultra-branded variants, the turntables that were chosen tended to be of a lower rank than those fitted to the Goodmans units, being a choice of midrange BSR and Garrard decks. This careful positioning of its products helped give the impression that Goodmans was a specialist hi-fi brand.

The series was topped off in 1975 with the 120 and 150. The former was a sizeable unit said to produce over 100W per channel into 4ohm while the 120 was essentially a restyled One Ten with identical specifications but a fascia having softened edges and control keys sporting rounded corners. It could be ordered with a silver front and a teak or walnut sleeve, but to these eyes at least, it looked most striking in all-black. The poor man's B&O had become the poor man's Braun.

To help with exports and give the unit a Continental feel the bands on the One Ten were marked with German abbreviations, *eg*, 'K' for short wave and 'U' for FM. All connectors at the rear were to DIN standards too. Inside, some noteworthy and advanced circuit techniques had been employed. The amp was DC coupled and rated at 50W per channel into 4ohm [see PM's Lab Report, p125]. Two integrated circuits were used in the preamplifier, one in the MM phono stage, and one as the active element for the tone controls. The power supplies to the preamp were symmetrical and electronically filtered while electronic protection was used in the output stages to protect against overload.

> 'Unusually, the FM and AM front-ends used FETs'

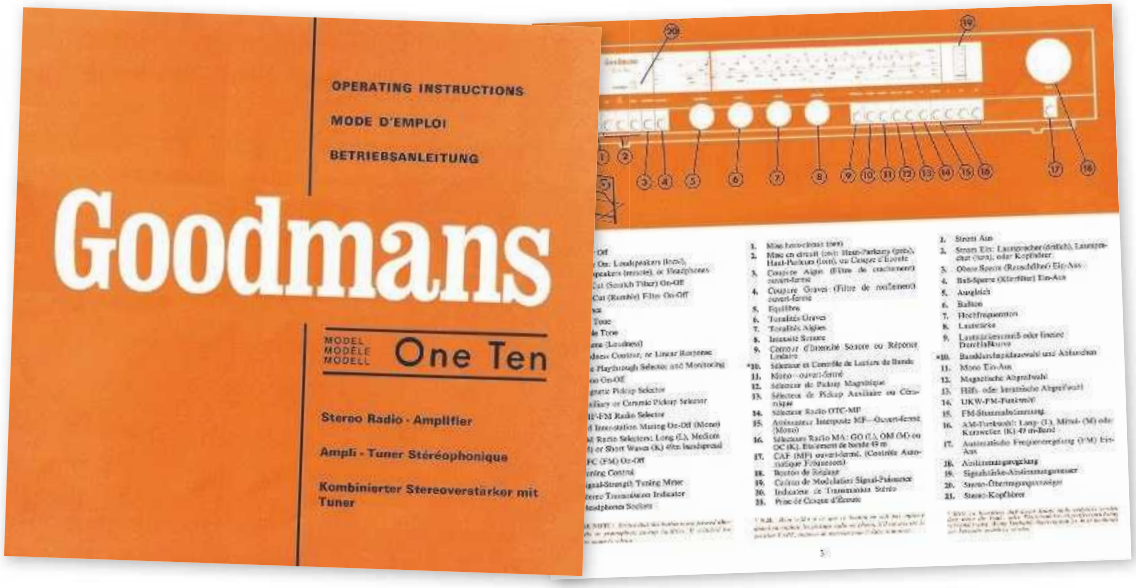
The tuner was no less well engineered, with an electronically tuned FM front-end using FETs and the latest ceramic filters in the following stages. The AM front-end also used FETs, which was an unusual refinement. A stereo decoder for FM was of course built in, being a basic regenerative type since IC-based PLL decoders were not yet available. Meanwhile, high-quality construction techniques were employed throughout, with the extensive use of alloy die-castings and extrusions.

**ABOVE: The receiver's clean lines and the subtle use of carefully chosen colours mirror the best Continental styling practice of the period**

## SIDE SOCKETS

The Goodmans One Ten is a familiar sight to those involved in vintage hi-fi, but to examine one closely reveals some significant details. For example, there is no 'on' button. Rather, one selects which loudspeaker group (or headphones) one wishes to use and that turns the set on. The headphone sockets are round the side of the unit, hidden by a little door. This keeps the lines clean, but could be a nuisance if the unit is fitted tightly in a rack.

Meanwhile, there are three inputs. One suits a standard MM cartridge, one is for a tape recorder built to the DIN standard and the other is labelled 'AUX', although it is also suitable for connecting a turnable fitted with a ceramic cartridge. One may think this would be the ideal place to ➔




**RIGHT: The One Ten's user manual is equally colourful! It's also very detailed in its explanation of the controls, inputs and features on offer**

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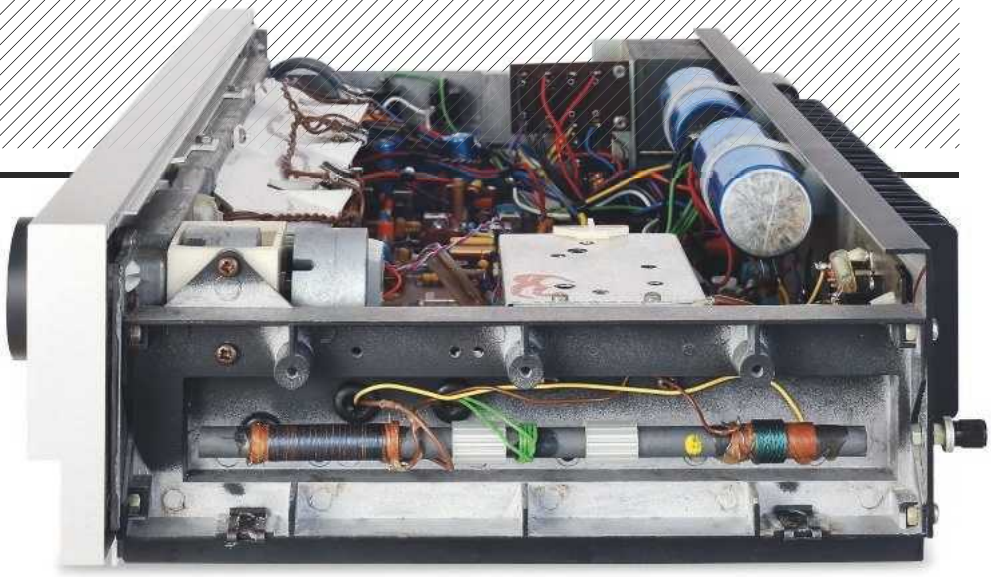


connect a CD player, but I would advise caution. As with many early designs, most of the inputs (and the built-in tuner) pass through the phono stage whose gain is reduced and response flattened to give the correct characteristic. This approach is less than ideal from an overload/noise point of view and those keen on obtaining the best quality sound should use the tape input instead because this bypasses this stage.

Finally, I found it surprising that the FM tuner has no preset stations, since it is electronically controlled. There is even a space for the buttons between the short wave and Automatic Frequency Control (AFC) keys, but it's manual tuning only. On the plus side, you do get a built-in ferrite rod antenna for MW and LW.

## TIM LISTENS

It is always fun to take a guess at how a piece of equipment will sound before turning it on for the first time. I'd imagined the One Ten would have a slightly thick, warm presentation, but in practice the opposite turned out to be true. The tonal balance of the amplifier is, if anything, a bit thin – a surprise given that it is a DC-coupled design. The Contour (loudness) option was not the answer as it had the effect of sucking out most of the midband without really boosting the bass or the treble. Apart from a sharp crack through the loudspeakers at switch on, the other characteristics of the amplifier section are favourable. Its noise performance is subjectively very good, with only a slight hiss audible with the volume control set to maximum. It also goes without saying that there is plenty of power, most of which is accessible without too much audible strain. The main issue is a strident midrange, which comes to the fore when playing at high levels. Perhaps a fuller bassline would have put this into better perspective.

The One Ten's character was fully revealed when playing 'Lady Writer' by Dire Straits [*Communique*; Vertigo 800 052-2) at what I call 'concert volume'. The sound was clean, but Knopfler's vocals and the lead guitar were exaggerated to the point where it sounded like he was shouting over the rest of the band. Otherwise I liked what I heard, as both clarity and texture were well portrayed and imaging was vivid and solid. This would have been a good amp to have kept in one's system into the CD era.

**ABOVE: Full marks for including an AM ferrite rod antenna, but surrounding it in radio-wave blocking chassis metalwork was not ideal**

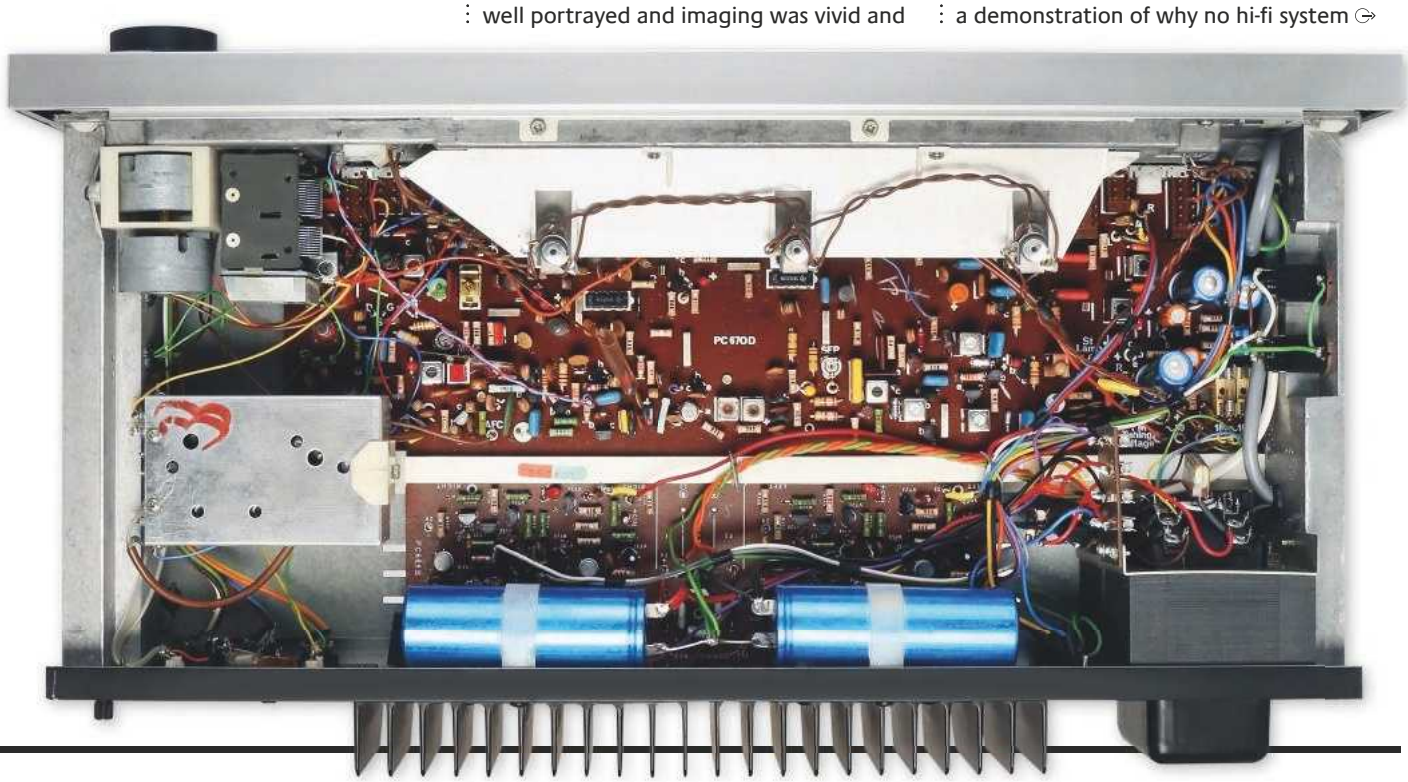
'Listening to *Radio 3 In Concert* was a real pleasure'

While the amplifier earns a cautious recommendation the tuner requires no such caveats. Given a strong signal it delivers excellent results on FM, with accurate centre tuning and really effective AFC. The design of the stereo decoder may not be as sophisticated as some, but it serves up a wide soundstage and doesn't introduce an excessive sound penalty when cut in.

## LIVE LOUNGE

Listening to *Radio 3 In Concert* on BBC Radio 3 (90.3MHz) was a real pleasure, the BBC National Orchestra of Wales providing a demonstration of why no hi-fi system ⇨

**BELOW: Lid off reveals well laid out internals with the two preamp ICs visible [top centre]. Also note how the big reservoir capacitors [blue] are located sensibly close to the power amplifier**



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**ABOVE: All connections to the rear of the One Ten are to the DIN standard, although the FM aerial socket is duplicated with a familiar coaxial type. The large heatsink casting in the centre keeps the hard working power transistors on the other side cool**

is complete without a quality FM tuner. Yes, the stereo image was slightly diffuse compared to hearing the same pieces played on CD at home, but otherwise it was easy to relax into the idea of being present at a live performance. The design of the tuner sections in receivers isn't always of the highest quality, but this one is uncommonly good.

I enjoyed my time spent getting to know the One Ten. Not only is it is a quality product that works well in most of the important areas but it's well built and well finished throughout. Adding a period pair of Goodmans Magister loudspeakers with their 15in bass units might well add some body to the One Ten's overall tonal balance, but I think you'll be pleasantly surprised by its sound nonetheless.

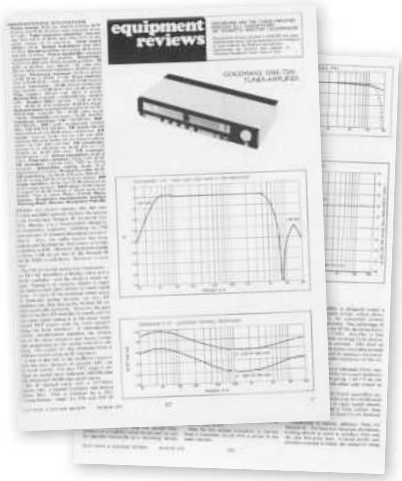
'The white One Ten is considerably harder to find'

## BUYING SECONDHAND

One Tens are still easy to find provided you don't mind the wooden ones. The white One Ten and all-black 120 versions are considerably harder to come by, but are worth seeking out if you want the ultimate in 1970s cool.

The main weakness is the poor quality of the components available to most of the British firms of the era. In particular, many of the resistors used take the form of a carbon rod with a metal ring pressed onto each end. This interface can form a poor contact over time, leading to noise and erratic operation. Similar observations apply to the small transistors, many of which are the half hexagonal 'Lockfit' type. Some are prone to absorbing moisture from the air, leading to all manner of faults.

Both these issues are more than offset by the excellent service manual, however, which is among the best and clearest I've seen. Every component is listed with its value, rating and function in the circuit – top marks. Note, though, that the DC-coupled output stages have no facility to adjust the offset at the speaker terminals, so if it's out of specification you have no option but to find the faulty component.




**ABOVE: Original review written by Gordon J. King and published in *Hi-Fi News & Record Review* March 1971. Gordon used Radford Tri-star 50 speakers**

## HI-FI NEWS VERDICT

**While not eclipsing receivers from the top Continental names in terms of outright performance, the Goodmans One Ten is still a fine piece of equipment that deserves serious consideration. The amplifier is muscular, but the real trump card is the FM tuner, which really takes some beating. Perhaps best of all, One Tens aren't expensive, so why not give one a try? Make mine a 120 in black over black please...**

Sound Quality: 75%

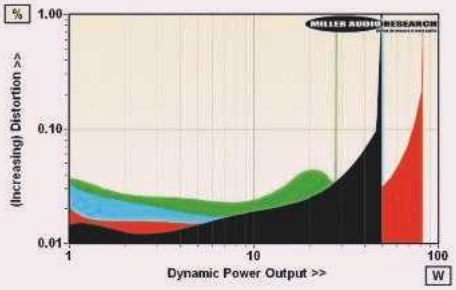
0 - - - - - - - - 100

# LAB REPORT

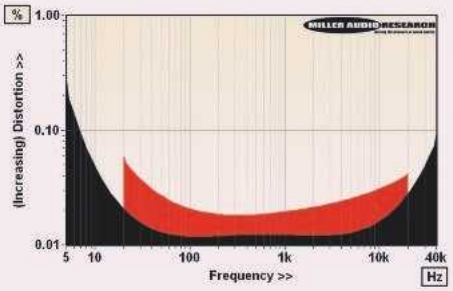
## GOODMANS ONE TEN *(Vintage)*

Goodmans rated this 584mm-wide receiver at 2x40W/8ohm and 2x50W/4ohm but the One Ten is actually a little more load-tolerant than this might suggest, delivering closer to 2x63W/4ohm and possessing sufficient headroom to accommodate 83W/4ohm under dynamic conditions. This falls to 51W and 27W into 2 and 1ohm, respectively, or 5.2A current at <1% THD – figures that are still above average for the era [see Graph 1]. The One ten also benefits from a uniform <0.05ohm output impedance and a response (–2dB/20Hz to –1dB/20kHz) that holds true into 8ohm down to 1ohm loads. The various filters are less subtle in impact with 'rumble', for example, accurately rated at –3dB/45Hz and –36dB/10Hz, and proving more than sufficient to quell the 'loosest' of reflex-loaded speakers when fed the most vigorous of arm/cartridge resonances! However, the –3dB/6kHz and –36dB/9kHz specification for its 'scratch' filter is wide of the mark – in practice it attenuates HF to the tune of –3dB/8kHz and –36dB/38kHz – just as the volume-dependent loudness 'contour' offers a gentler +4dB/50Hz and +1.8dB/15kHz at 1W/8ohm.

Distortion increases gradually with output from 0.009/1W to 0.02%/10W, 0.03%/30W and 0.3% at the rated 40W/8ohm, this very closely mirroring Gordon J. King's test results in our original review [*HFN* Mar '72]. At the time, Goodmans specified 'less than 0.1% at any power up to the quoted maximum'. Versus frequency, distortion is impressively uniform, holding to 0.01-0.03% at 1W and 0.02-0.06% at 10W from 20Hz-20kHz [see Graph 2, below] although the A-wtd S/N ratio is a little below par at 75dB (re. 0dBW). Of course, allowances should always be made for a tuner/amplifier that's past its half-century! **PM**




**ABOVE: Dynamic power output vs. distortion up to 1% THD into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Max current is 5.2A**




**ABOVE: Distortion versus frequency at 1W/8ohm (5Hz-40kHz, black) and 10W/8ohm (20Hz-20kHz, red)**

## HI-FI NEWS SPECIFICATIONS

| | |
|---|---|
| **Power output** (<1% THD, 8/4ohm) | 43W / 63W |
| **Dynamic power** (<1% THD, 8/4/2/1ohm) | 50W / 83W / 51W / 27W |
| **Output imp.** (20Hz–20kHz/100kHz) | 0.042-0.049ohm / 0.175ohm |
| **Freq. resp.** (20Hz–20kHz/100kHz, 0dBW) | –2.0dB to –1.1dB/–17.5dB |
| **Input sensitivity** (for 0dBW/40W) | 15.9mV / 101mV |
| **A-wtd S/N ratio** (re. 0dBW/40W) | 74.9dB / 90.9dB |
| **Distortion** (20Hz-20kHz, 10W/8ohm) | 0.019-0.059% |
| **Power consumption** (Idle/rated output) | 11W / 140W |
| **Dimensions** (WHD) / **Weight** | 584x115x305mm / 12.3kg |

# Halcro dm58 monoblock

Here's an amplifier that doesn't just look different, it's different through and through. **Ken Kessler** hears a potent powerhouse from Down Under

*Hi-Fi News* Apr 2002

**Each month *HFN* will bring you an article from our vast archive of features and reviews from yesteryear**

There are two piles of magazines, some 150cm tall, sitting in my lounge. They consist mainly of hi-fi titles that I can't read until they're 'out of date'. Why? Because I don't want to be influenced by the reviews, and I don't always know whether or not I'll be reviewing a component I've just seen slammed or praised. Thus it was that I tried to avoid whispers about the Halcro amplifiers from Australia. Even so, I kept hearing about these 'amazing amps' from all and sundry.

## DRINK TO THAT

Not that you need anyone else to tell you that the Halcro dm58s are – at the very least – 'different', that they stand out from the pack. The finish is so good it's hard to believe we're talking Land of Foster's rather than Land of Liebfraumilch, while the styling reeks of Denmark. Although vertical amps are now very much 'in' (credit goes to – I believe – Mark Levinson) the dm58s aren't merely vertical but modular, and this tower-like construction isn't simply an aesthetic conceit. With a background based heavily in research, Halcro's designer Bruce Candy determined that there were genuine sonic gains to be made by a change from the traditional physical topology, what he describes as 'a complete reinterpretation of the amplifier aesthetic'.

Uncommonly pretty, the Halcro dm58 consists of an aluminium case with a satin anodised finish. The side panels are finned, while all other surfaces are smooth. To add a touch of the organic, each side panel's lower extremity is a solid mahogany foot, also in a satin finish.

**ABOVE: The vertical sides of the dm58 monoblock sandwich the Audio Drive, Audio Power and Power Supply Modules**

## HEAVY METAL

On the underside of the bottom module is the AC mains input and the primary on/off switch, which you won't ever want to access again: warm-up time from cold is a day. Instead, there's another switch – a funky 'air pressure' push button – resting underneath the upper module. Press it, and the LED on the

lower section changes from red to blue. Behind the upper module are solid spade-connector-only binding posts for bi-wiring, an earthing terminal and inputs for single-ended (phono) or balanced (XLR – a rotary control chooses between the two).

Those modules sandwiched between the two upright sections are the 'housing compartments' containing the Audio Drive Module, the Audio Power Module and the Power Supply Module. Halcro feels that the Audio Drive Module and Audio Power Module 'must be within very close proximity of one another', but they are shielded by a massive 16mm-thick plate of non-ferrous metal to prevent any residual non-linear fields from the power stage feeding back to the input stage.

## STACK MACHINE

The Power Supply Module, on the other hand, is physically separated from the other components for optimum shielding; the base of the Audio Power Module and the top of the Power Supply Module each have 3mm-thick non-ferrous metal plates. The Audio Power Module also requires 'a major heatsink' in order to dissipate excess heat, the dual heatsinks being housed within the amp's vertical slabs.

But Halcro isn't tunnel-visioned, so the company also recognises that there are other benefits, including the way that separated, screened boxes perfectly suit vertical stacking to create a small footprint. Well, 'Aussie small' at least, because however much Halcro wants to boast that each 56.75kg unit occupies less floor space than most conventional amplifiers, a 400x400mm footprint is hardly Cinderella-esque. Height, by the way, is an awe-inspiring 790mm, so a pair of dm58s monoblocks is a sight to behold.

Cleverly, the company also points out that this 'aesthetically relates well to the typical vertical speaker formats', and I have to admit that they looked right at home next to the Wilson WATT Puppy System 6 they were driving. Also mentioned on the unit's behalf were the fact that freestanding amps don't require support stands and that the sheer acreage provides maximum surface area for heat dissipation. No matter how hard these were driven, they never got more than lukewarm.

> 'Distortion is measured in parts per billion here'

Candy describes the amplifier in the comprehensive technical paper that was supplied as conventional in that its basic circuit consists of a differential input voltage-to-current converter, current mirror, voltage amplifying stage and a unity voltage gain power output stage. It's non-symmetrical because Candy argues that there's 'no such thing' as fully symmetrical – and besides, single-ended triodes are the flavour of the decade, and they ain't symmetrical either. But Candy also has a novel approach to retro, for with the dm series amps, he's revived the specifications war. He feels that the nastiest distortions are in the upper frequencies, and he also believes in clean and fast power supplies.

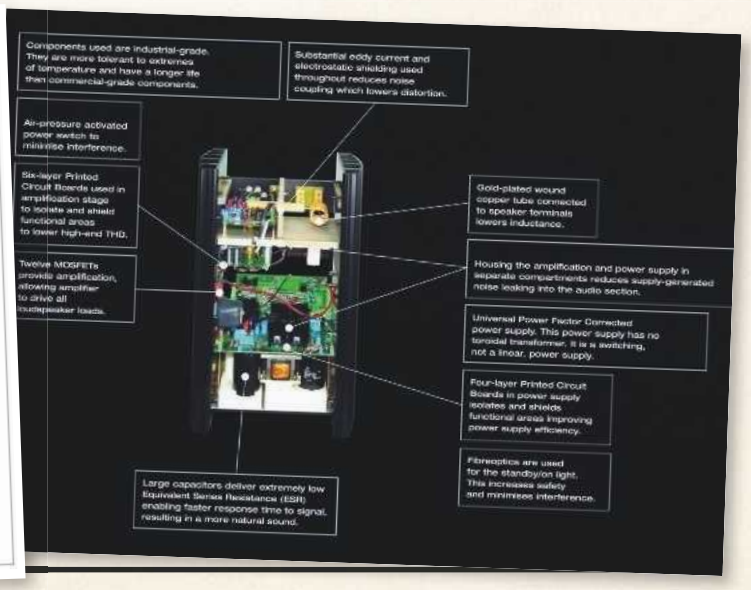
**ABOVE: Beneath the Audio Power Module is the 'air pressure' push button that wakes the amp from standby, an LED on the amp's lower section then turning blue**

**TOP RIGHT: The dm58 consists of an aluminium case with a satin anodised finish**

**BELOW: Spec sheet for the dm58 and (right) Halcro brochure shot highlights main internal components**

## POWER IN NUMBERS

Yet while Candy is perfectly happy to state that there's no such thing as total symmetry and he's not bothered about producing a skin-singeing true Class A design – the quiescent current is deliberately adjusted to a higher level to minimise crossover distortion – he's also playing the specifications game with distortion that is measured in parts per billion. The Halcro uses power FETs in the output stage, ➲



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## POST GRUNGE

As with the top amplifiers from Linn, the dm58 uses a switch mode power supply, in anticipation of CE regulations and adhering to Candy's belief that the grunge produced by conventional power supplies is one of audio's biggest culprits; like the Linn, the dm58, and the higher-powered dm68, lay to rest any worries that the post-CE-approval future would be one free of hugely powerful amplifiers.

Like the external hardware (and that cool air-pressure switch), the internal components are no-compromise. All of the semi-conductors are 'at least industrial grade', and all electrolytics are rated to 105°C. Resistors were chosen for their linearity, and the capacitors are MKP10/FKP1 types. PCBs are 6-layer for the power amp section to minimise stray magnetic fields and 4-layer in the power supply to minimise EMI and voltage transients, to improve reliability and efficiency.

There's also plenty of mains filtering – EMI filtering on the input and between amp and power supply, plus high-frequency filtering at the inputs and outputs – while the amount of protection it boasts makes it the perfect amp for paranoids. It's short circuit-proof, has over-current limiting, gradual power limiting if it grows too hot, cut out if continuous DC offset appears on the outputs, and protection against mains transients.

> 'It swings, by virtue of its deep and life-like bass'

Because it can be used in both single-ended and balanced modes, I drove it with the GRAAF 13.5B preamp for most of the listening, as well as with the Musical Fidelity Nu-Vista and Quad QC twenty-four in single-ended mode. Regardless of what you may or may not think of balanced operation, in the case of the Halcro dm58, the superiority is not subtle. Sources, meanwhile, included the Nu-Vista 3D and the Marantz CD-12/DA-12 CD players.

**ABOVE: On the rear of the Audio Drive Module can be found solid spade-connector binding posts for bi-wiring, an earthing terminal and inputs for single-ended (RCA) or balanced (XLR) connections**

**TOP RIGHT: The amp's side panels are finned and house heatsinks, while all other surfaces are smooth. The height of the dm58 is 'an awe-inspiring' 790mm, so a pair of dm58s is a 'sight to behold'**

**RIGHT: At the top of the amp are the Audio Drive and Audio Power Modules. These are shielded by a 16mm-thick 'non-ferrous' plate to minimise any magnetic coupling between the power amp and input (voltage) amplifier**

## SKINNY DIPPING

Damn, is this a fine amplifier. Even though the beast requires a long warm-up period, it sounds so good at cold temperatures that you can only wonder how it might improve. What the warm-up does is free the sound, increasing the already wide dynamic contrasts, while ⇨

## FIFTY YEARS AND COUNTING

**Halcro has tossed out phrases like 'The Only Amplifier In The World To Challenge A Theoretical Limit' and 'Unprecedented Harmonic Distortion Levels Of Less Than 1000 Parts Per Billion'. Its claim is based on the notion that it has taken the typical audio manufacturer 50 years to reduce distortion at 20kHz from 0.1% to 0.01%. 'Now, with a single revolutionary technological advancement, Halcro has reduced distortion to less than 0.0001%.'**

**To put this 'parts per billion' business into context, and using the results of intensive testing at Adelaide University for verification, Halcro can claim to produce amplifiers with distortion of less than 1000 parts per billion at full power (the aforementioned 0.0001%), while typical high-quality amplifiers produce 200,000 parts per billion. Reading through the bumf, there's even mention of the dm68 measuring at 99 parts per billion. We are, of course, talking about vanishingly low distortion and most of us are still sceptical about the numbers game. But *something* has to account for the Halcro amplifier producing such clean, open, natural sounds...**

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sweetening the treble to almost tube-like levels. Y'see, this amp is so clean and naked-sounding, as the Candy-man intended, that it is merciless in revealing the ills of all that go before it. And in a certain sense, yes, it could be mistaken for the clinical. But it isn't: it's merely open-sounding, probably the most untainted sound I've ever heard.

## BORN FREE

And yet how does one account for the following: it's neither colourless nor characterless. But if it's truly neutral and clean, and therefore lacking any artefacts (either dissonant or euphonic), how can it have a personality? But it does. It swings, by virtue of the freest, deepest, most life-like bass I've heard this side of the ARC Reference 600, with such speed and precision that I even subjected myself to Rob Wasserman CDs. The bass is so luscious that you're tempted to disconnect the Wilson WATTs...

But then you feed it some vocals, this month I'm on a Temptations jag. Even though I wanted to lock the whucka-whucka guitars on 'Cloud 9' into A-B repeat mode – this amp could have Marshall emblazoned on it – I headed for 'Papa Was A Rolling Stone' to hear high vocals floating over low. I have no idea what Candy listened to as a kid, but I bet he heard more than his share of Motown. The Halcro dm58 delivers all of the textures and nuances with the flair of a Radford STA25, but with reserves of grunt which no brace of EL34s can, alas, muster.

It loved the Wilson WATT/Puppies, and a few minutes with the Apogees showed it to be oblivious to loads. Quad electrostatics? No sizzle, no sting, and a dose of control that had me fantasising about how these would sound in the SME Music Room.

'It's so good it seems a veritable snip at the price'

Yeah, I'm glad I didn't look at the reviews, or pay attention to the stories about the stunning amp from Down Under. It's so good that the £20,750 per pair seems a veritable snip. So, here's another amp to add to KK's Lottery Win list, alongside the ARC REF600. And to think DTS uses nine of 'em plus five of Halcro's larger dm68s for multichannel... ⏻

**ABOVE: A peek under the bottom Power Supply Module reveals the mains inlet and primary power switch (the amplifier is intended to be left on). The feet are solid mahogany**

**BELOW: Original pages from the April 2002 issue of *HFN* in which Ken Kessler reviewed the £20,750 per pair Halcro dm58 monoblock from Australian company Halcro**

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**EXPOSURE** 2010 amplifier, £400. Cash on collection only. Tel: 07834 898617

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**MUSICAL** Fidelity X-A1 integrated amplifier. 50W per channel. Mint condition. Boxed. £375 ono. Demo welcome. Tel: 07505 057414

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**300B** 12W-per-channel valve amp, single-ended, in excellent condition but one of the 300B valves will need replacing, hence price of £450. Cash on collection only. Located in Crewe, Cheshire. Tel: 07708 431963

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**MORDAUNT** Short 40th Anniversary Performance 6 speakers in Gloss Black finish. Collection only, BR3 5TL. £1500. Tel: 079731 32199. Email: time2gojb@gmail.com

**SONUS** faber Toy bookshelf speakers. Made in Italy, leather finish, in very good condition. Boxed, £650 ono. Collection only, near Boston Lincolnshire. Free Atacama stands. Tel: 01205 280869

**B&W** 801 D4 flagship speakers. Brand new and still in opened boxes. £26,000 ono. Estate sale. Tel: 07765 107110 Email: dakersvictor@outlook.com

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**THORENS** TD160 turntable with SME 3009 Series III tonearm, no cartridge. £550. Collection only from Maidenhead, Berkshire. Pics available. Email: arfer67@gmail.com. Tel: 07506 793547

**SME** Series IV tonearm. Unused since SME service and upgrade to current specification, and fitted with FD-IV fluid damper. As new condition with box and all tools. £2650. Tel: 07305 871175

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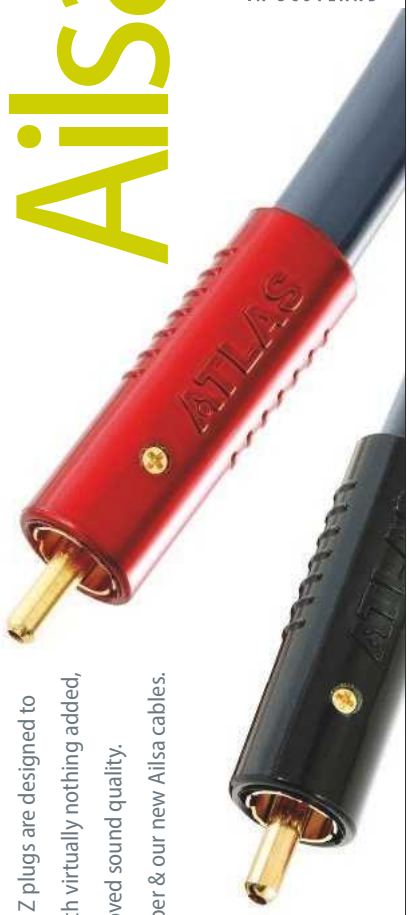


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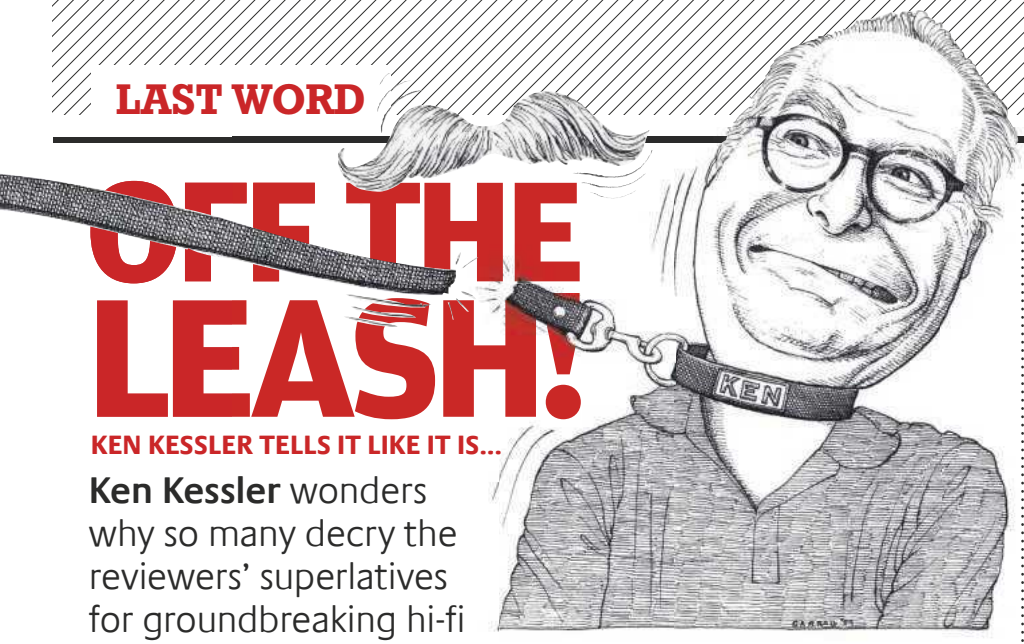


**KEN KESSLER TELLS IT LIKE IT IS...**

## **Ken Kessler** wonders why so many decry the reviewers' superlatives for groundbreaking hi-fi

If there is a reason why I am obsessed with context, it might be having studied philosophy at university, including a course in logic. As a result, trenchant is my disdain for those who fail to observe, employ or appreciate it. Relating context to hi-fi is to deal with something fundamental: without context, every review in every magazine is meaningless because a frame of reference, *ie*, context, is absolutely essential for rating the component being reviewed.

### TARRED AND FEATHERED

It's so obvious as to be simplistic, certainly for those who know that a hi-fi system consists of elements from disparate manufacturers. (Let's leave one-make systems for another time.) On a philosophical level, it begs the cliche, 'Nothing exists in a vacuum' – another way of begging the need for context, in this case a physical arrangement if a chain of electronics is to function. This means that context is mandatory for us because no 'separates' hi-fi component operates on its own. The system thus becomes the context.

But then we come to context beyond the system as it sits in your listening room, that in which retailers, manufacturers, magazines and hi-fi shows exist. It is this context that vexes me on a monthly basis, as I and other reviewers are frequently faced with displays of shock/disbelief/fury, whatever, if one of us dares to call, say, a £5000 amplifier 'entry-level'. A psychologist would immediately recognise this as the wailing of one who cannot afford said amp, rather than deem the anger as accurate observations because they ignore price *vis-à-vis* the market as a whole. Again, context.

However matter-of-fact a writer's remarks about this symbolic £5k amp, and regardless of a lack of snobbery or desire to cause offence when 'entry-level' is employed, out come the villagers with their pitchforks, torches, tar and feathers. The trouble is, in a world of £100,000-plus amplifiers, £5000 *is* an entry-level of sorts. How is that any more absurd than a time when £15 burgers are the norm in London restaurants, and a pint of beer costs what? £5-£6?

> 'Out come the villagers with their pitchforks'

Appreciating how some high-end components might actually be worth every penny – in context, again – eludes kvetches and trolls. This, however, has been an occupational hazard for esoteric audio dating back at least for the near-40 years in which I've been writing about it, and long before observers of Internet behaviour identified moaners as trolls.

Their predictable mix of dismay and outrage baffles me, because I don't recall ever anyone going ballistic when a Cayman, with its near-£50k price tag, was called 'an entry-level Porsche' in a car mag, or how a circa-£3000 Tudor is 'an entry-level Rolex'.

What this does for the hi-fi reviewer is create a form of paranoia. None of us worry about appearing in *Private Eye*'s 'Pseud's Corner' because we are not on that journal's radar, as are major newspapers. But some of us are aware of a need to avoid hyperbole, taking care with superlatives. This self-censorship can be a self-inflicted trap.

Over 50 years ago, legendary US editor Harry Pearson developed the exotic language of the high-end. To outsiders, our cliches are as comical as those used by wine critics. For 'scents of tobacco and leather' in wine writing, we have 'plummy midrange' and 'thunderous bass'. There are times when even a thesaurus has its limits. More perilously, calling anything 'the best' is absurd unless you've heard every rival.

### BEYOND EXPECTATION

Then there are situations beyond a writer's control, for me a sequence of new models too good to hamstring with understatement. Whatever their greatness, dubbing them 'game changers' must not to be done lightly, no matter how much they merit it. And the only way something can be declared a game changer is, yes, within context.

Of late, I have reviewed four products in four different areas and price ranges of which all are worthy of that highest of accolades: a line of cartridges costing £3000-£50,000, a turntable/phono package under £2000, an integrated amp for £5200 and a US $500,000 pre/power set-up (give or take a few bucks and not shown in pounds because of current exchange rate fluctuations).

In order, they are the DS Audio optical cartridges with dedicated phono amps [see p68], the Pro-Ject X2 B/S3 B balanced turntable/phono amp [*HFN* Sep '22], the Audio Research I/50 integrated [*HFN* Oct '22] and the D'Agostino Relentless pre/power units [*HFN* Mar '20 & '22]. Within their respective classes – and price applies more to the I/50 as it plays such a major part in its greatness – they have, literally, revised expectations. Thus, they changed the game.

Along with philosophy, I studied English literature, so I try to avoid purple prose. But, in context, these products beg superlatives. I, for one, will not begrudge them that.

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